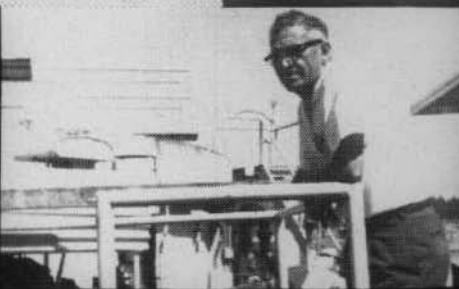


FLORIDA HEALTH NOTES



VOLUME 62 — NO. 1

JANUARY 1970

PUBLIC HEALTH
at the Grass Roots

PUBLIC HEALTH *at the* *GRASS ROOTS*

* Danny is brought into a general clinic by his mother. The 11-year-old boy has been bitten by a stray cat. He may need rabies shots unless the cat is found, tested and proven to be free of rabies.

* Mr. Farnham has a catheter which needs frequent attention to make sure it is operating properly.

* Mrs. Douglas, a young mother, has just come home from the hospital with a new baby and needs to be taught how to care for her infant.

* Mr. Clark's neighbors are complaining that his dog's pen has an odor and is a health hazard.

* The drainage from Mr. Stott's pig pen runs into a ditch which flows past an elementary school and into a stream which it is polluting.

All of these people need the County Health Department for one reason or another. While operating as a representative of a statewide agency, the Division of Health, the County Health Department is at the same time a part of the local family of county agencies. It is public health at the grass roots and it is part of the system that has made public health successful in Florida for 80 years.

However, County Health Departments have been in operation only about half that time. Forty years ago the first County Health Department was started in Taylor County. Ten years ago, the St. Johns County Health Department joined the partnership—the last to do so.



Florida public health—at the grass roots—Involves the work of many people: nurses and physicians, clerks, sanitarians and sanitary engineers, and many kinds of specialists. The County Health Department system has been in operation in Florida for some 40 years.



This issue of **Florida Health Notes** is a story of public health in the County Health Departments—at the grass roots—where individual problems take place; where communicable disease epidemics are born, or avoided; where pollution begins. We'll tell you about the traditional public health programs, as well as special projects which are unique.

To illustrate our story, we will use two county health units as examples: the Walton-Holmes-Washington unit as a model of a small county health department operation; and Palm Beach County Health Department as a prototype of a large county operation.

The Beginning of Public Health in Florida

No recounting of the story of public health in Florida would be complete without telling about the beginning of the old State Board of Health—established under the Constitution of 1885. A special legislative session, called by Governor Francis P. Fleming, set up the State Board of Health in 1889 following the yellow fever epidemic of Jacksonville. It operated for some 40 years with district offices and appointed "county agents."

County boards of health had also been established, but during epidemics, the varying county rules made enforcement of health laws difficult. Travel was restricted from suspected epidemic areas and this affected the economy. Health officials realized that the division of authority between the State Board of Health and county boards was a mistake and the legislature abolished the county boards of health.

However, the first state health officer, Dr. Joseph Y. Porter realized the necessity of having local representatives, and selected practicing physicians were appointed as "county agents." During

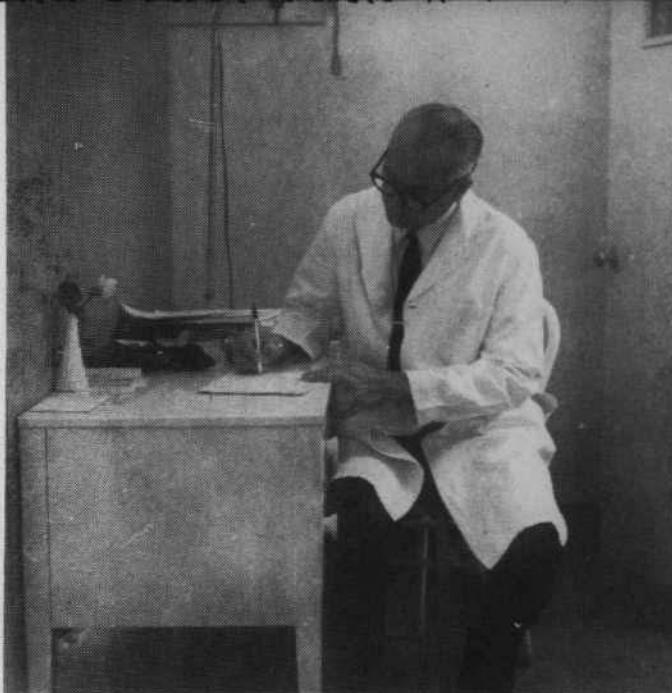
FLORIDA HEALTH NOTES

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The director of the small health unit is a clinician as well as an administrator.



the 1920's attempts to establish County Health Departments were killed by reductions of appropriations for the State Board of Health.

The Taylor County Health Department was organized in 1930 after the county had experienced the success of malaria and hook-worm control programs carried on jointly by the county, the State Board of Health, and U. S. Public Health Service. For three years the unit operated but the County Commissioners had a change of heart and cut the health department from its budget—replacing it with a nurse. After three years it was reestablished.

Leon County Health Department was organized in 1931, followed in 14 months by the Escambia County Health Department. Some of the health units had financial difficulties and were out of operation for a few years. But by 1951, all of the counties, with the exception of St. Johns County, were in the family.

In 1931 a county health unit act was passed by the state legislature that permitted the State Board of Health to join with the local authorities to form County Health Departments. It also permitted the consolidation of local city, county and school health departments, and authorized two or more counties to join together to form a county health unit under a single health officer. Minimum staffs were to include a full-time health officer, who could

be shared with other counties, public health nurse, sanitarian and clerk. Since its inception, little change has been made in the basic law. Now there are 25 single county health departments; six two-county units; and 10 three-county units.

Florida is one of the few states that has this type of public health organization and it is rated one of the best in the nation. Some states have regional offices; others have a combination of regional and local units; and a few have a multitude of city and county units with fragmented services and responsibilities.

Under the constitution approved by the Florida voters in 1967, the 1969 Legislature reorganized the state government—consolidating some 200 state agencies into 23 departments. The old State Board of Health, as of July 1, 1969, became the Division of Health in the Department of Health and Rehabilitative Services. However, this did not change the operations and responsibilities of the County Health Departments.

Workers at the Grass Roots

Who helps Danny, Mr. Farnham and Mrs. Douglas with their

In-service training for staff personnel and orientation for new employees are important in the operation of County Health Departments.



medical problems? Who is concerned with Mr. Clark's dog pen and Mr. Stott's pig pen?

The County Health Departments employ over 2500 persons who are concerned. Approximately 120 are physicians; 900 are public health nurses; 400 are sanitarians; and 620 are clerical workers. There are 25 dentists, 20 sanitary engineers and 50 laboratory professional and technical workers. In addition, there are some 300 biologists, nutritionists, health educators, community health workers, clinical aides, veterinarians and administrative personnel—just to name a few.

Dade County Department of Public Health has the largest number of workers with about 550 employees. Twenty counties have five employees or less.

Today public health nurses make up the largest group of public health workers. The Shephard-Towner Act of 1921, which was primarily concerned with the health of mothers and babies, allotted matching funds to the states and through this program public health nursing was formally initiated in Florida. The first nurses worked out of the State Board of Health or were assigned to districts. Local committees were organized in the early 1930's to orient communities to the duties of public health nurses, and obtain equipment and supplies for clinics. Several county commissions were so impressed by the work of the nurses that appropriations were made to continue their work.

The organization of County Health Departments in the 1930's and 1940's changed the picture and now most of the public health nurses in the state-county partnership are on the county level.

Public health nurses—both in the small and large county units—have many duties. They work with mothers and babies, both in clinics and at home; care for persons who have acute and chronic diseases; visit schools at regular intervals; make follow-up visits to people who have venereal disease, tuberculosis or other communicable diseases; counsel persons with personal and emotional problems; work with parents of retarded children; and inspect and supervise nursing homes and day care centers.

Environmental health is sometimes divided into two major functions—sanitation and sanitary engineering. Many counties

have only one sanitarian who carries on all programs. Other County Health Departments have up to 65 sanitarians who carry on specialized programs, such as food handlers training, restaurant inspection, migrant health, or nursing home inspection.

Nine counties have sanitary engineers who carry on the work of approving plans for sewerage systems and water plants; supervising shellfish and crustacea operations; and overseeing public swimming pool construction and maintenance.

The clerical staff of the County Health Department is as important as the other personnel. In the smaller county operation, the clerk may at times be the only one in the office. She acts as receptionist, secretary, file clerk, budget watcher. She keeps financial records and does many of the duties carried on by specialists in the larger County Health Departments. Sometimes, such programs as Hospital Service for the Indigent, Medicare, and Maternal and Infant Care projects require mountains of paperwork.

In the larger County Health Departments, the clerical staffs have specialized duties. They work in vital statistics, tuberculosis or venereal disease control, on the switchboard, in the reception area, as private secretaries, or administrative assistants.

In the early days of Florida's public health, county agents were physicians who frequently worked alone. They were usually private physicians who carried on the programs of public health along with their practices.

Today, the county health officer must be a graduate of an accredited medical school; and according to Division of Health policies, if he moves into the state he must secure his medical license in Florida within two years after taking his position. Many of Florida's county health officers have their master's degree or doctorate in public health. Some are certified by the American Board of Preventive Medicine as recognized specialists.

Because financing a County Health Department is a cooperative effort between the Division of Health and the local county government, the selection and appointment of a health officer is a joint undertaking. The Division of Health maintains an active recruiting program to find physicians who have the requirements for education, experience and suitability. It recommends the candidate to the County Commissioners for employment. While the boards of county commissions actually are the hiring agencies

The clerical staff is an important part of the County Health Department. It has many specialized duties, such as maintaining health records and files of hospitalization and indigent programs.



in all situations, the county health officer is responsible to the Division of Health for the actual operation of the health department which he directs.

Because of his close association with the county commissioners and other local organizations and agencies, the county health officer keeps them informed of his plans for the operation and financing of the County Health Department.

The county health officer is a deputy of the director of the Division of Health. He enforces the state laws regarding health, the State Sanitary Code, and other environmental health statutes. He serves as local registrar of vital statistics, recommends hospitals and nursing homes for licensure, plans and executes communicable disease control, and enforces local laws which the state legislature, boards of county commissioners or city or town council may pass. In the large counties some of these duties are delegated to appropriate personnel.

The Small County Health Unit

Florida's 16 multi-county units serve populations ranging from 23,300 to 83,000 persons. The three-county unit of Walton-Holmes-Washington serves a rural area of some 39,000 persons. The economy is limited; there are few physicians and hospitals, and many of the people are in the lower socioeconomic bracket.

The three health departments share the time of Dr. William G. Simpson, a retired U. S. Public Health Service officer, who came to the area in 1965. He spends three days a week in Walton County, the larger of the three; and one day a week in each of the other two. However, should his services be required in one of the counties on a certain day, his schedule is flexible enough to allow him to handle emergencies.

Prior to the formation of these health departments (the first one was organized 29 years ago) there was little public health activity in the counties. Nursing and medical consultants came from the State Board of Health to give limited medical services. Most of the roads in those days were of clay and many of the schools were one-room buildings.

Local Financing and Staffing

The problems of obtaining money and personnel to meet the needs of present programs and future expansion face all County Health Departments. Money to run the operations comes to the health departments from numerous sources. On the local level it comes from the county commissioners, school boards, city or town governments and donations. Some County Health Departments have a source of revenue from the issuance of health cards; some collect fees for nursing care in the home—according to the amount patients are able to pay.

Dr. Simpson says when the time comes that funds for the County Health Department are not adequate, some programs may have to be curtailed. When local funds are cut from the budget or reduced, services to people who need medical care are reduced. Mothers and children, who are least able to take care of themselves, usually suffer the most. When a federal or state-financed project expires, the services it gave are often carried on by the County Health Department at local expense.

According to Dr. Simpson the future of his County Health Departments is tied into the economy of the rural counties which he serves. He sees industry gradually moving into the counties and once the economy starts to move, expansion of health facilities and services for the residents of Walton-Holmes-Washington Counties

becomes necessary. There has been more planning and expanding of programs since he took over the operation of the county unit.

There is usually at least one position open in the three-county unit. The county health officer finds that staffing a rural health department is difficult but he tries to avoid drawing people from the local hospitals. Professional persons are hard to find and there are usually openings for nurses. The sanitarians in the unit have been in their positions for a number of years. Clerks and typists are usually high school graduates with some business training and natural ability. Their positions are usually adequately filled and duties are varied enough to make the work interesting. Community health workers on special projects and clinical aides round out the staff.

Public health nurses in all County Health Departments carry on basic programs which provide medical services for mothers and babies.



The county health officer conducts the general, family planning, prenatal and post-partum clinics. Public health nurses usually carry on the general clinics where follow-ups are made of family planning and mental health patients; immunizations are given as well as counseling; and eye, diabetes and blood pressure screening may be carried out. If a medical problem arises that needs the attention of a physician, the patient may be asked to come back to see the county health officer at a time when he is in—or in case of an emergency other arrangements may be made.

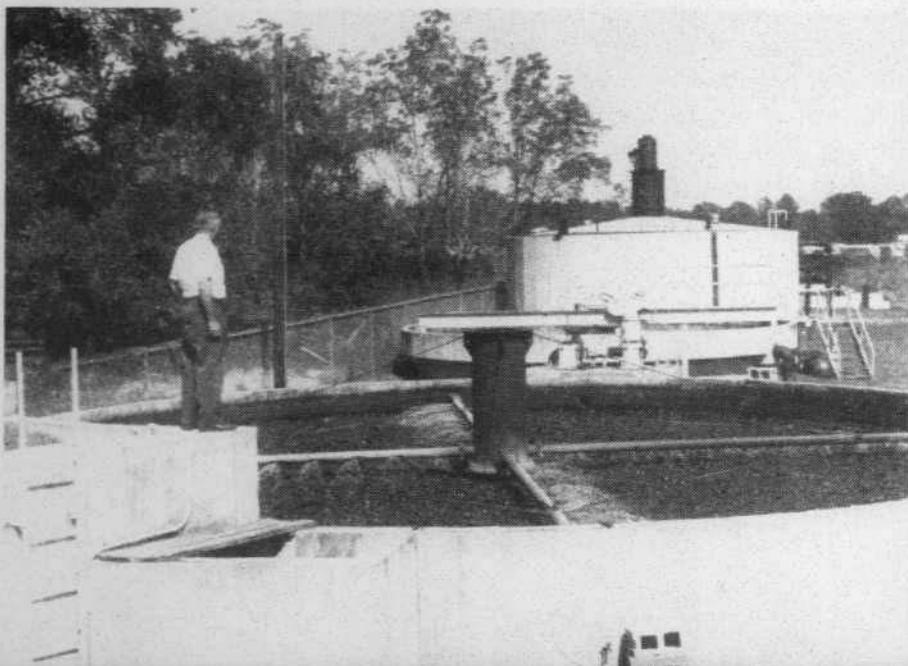
Nursing Services in a Small County Unit

The public health nurses in the Walton-Holmes-Washington unit carry on the traditional nursing services for the people of the counties. In addition, there is a pilot project in hypertension (high blood pressure) screening. Through civic clubs, home economics classes, industries, clinics, and special "hypertension" parties, the nurses seek those persons who have high blood pressure. The aim is to screen all persons over 15 years, as well as complete families, but the nurses find that the men of the community are the hardest to reach.

Nursing programs during the early days of the County Health Departments included: immunizations in schools and clinics, venereal disease detection and eradication, and intestinal parasite control. Many pregnant women in the rural counties were delivered of their babies by midwives, but gradually more of the women started going to hospitals to have their babies. However, all of these situations still exist in these counties and midwives still deliver some babies.

Today more health problems are revolving around chronic diseases. Because of the limited nursing time available, chronic

The sanitarian of the small health unit may oversee the operation of sewage treatment plants and insect control districts. These duties are usually handled by engineers or specialists in larger County Health Departments.



diseases are being given top priority. This means more home nursing care is being given, and more health education is necessary.

Sanitation in the Small County Unit

Environmental health problems are similar in the small and large counties, but for the one sanitarian in the smaller county supervision of the health aspects of eating establishments, grocery stores, meat markets, schools, sewerage and water systems, dairy farms and housing is a demanding job.

In addition, the sanitarian may supervise the insect control program and represent the health department on the local Civil Defense Council. The nursing service of the County Health Department is to be responsible for first aid during emergencies; the sanitarian is to check on potable water supply, sewage, burial, contaminated food disposal and garbage removal.

The traditional environmental health programs are carried on effectively in the small county units. School lunchrooms are checked monthly because they serve hundreds of meals more each day than the local, rural restaurants. These eating establishments are checked on a regular basis unless there is a food poisoning outbreak. One sanitarian, in a rural county, was involved when such an epidemic occurred and 40 persons became ill. Investigations by the Division of Health's epidemiologists and the County Health Department staff showed that all of the persons had eaten together in a local hotel. Steps were taken by the County Health Department to help the management to improve sanitary conditions.

Nursing homes and foster homes are visited by the sanitarian and checked for safety and sanitary conditions. Surveys of dwellings are also made by the sanitarian to find out how many have adequate sanitary facilities. One such survey in Holmes County showed that there were few outside privies but there was a need to upgrade the construction of homes. However, the County Health Department reported that the standard of new housing—even in rural areas—is greatly improved under federal programs.

Florida's statutes define a public water system as one that serves 25 or more persons. The sanitarian may help the engineer to check water systems and send samples to the public health laboratories for testing. He checks the installation of septic tanks

and sometimes reviews plans for sewerage and water systems before sending the plans to Division of Health's sanitary engineers for final approval. The sanitarian also inspects dairy farms at least once a month and regularly sends milk samples to the laboratories for testing.

He investigates complaints and sees that nuisances which are public health hazards are corrected. When Danny, the boy at the beginning of our story, was bitten by a stray cat, the sanitarian had to follow through to make sure the cat was found, and determine through the laboratory that the cat was not rabid. In this case, the cat was found dead; its head was sent to the laboratory which reported the cat was negative for rabies. The sanitarian also works with representatives of other state agencies to improve the environment of the community.

The Large County Health Unit

Twenty-five Florida counties have single County Health Departments—with their own directors and staffs. These health departments serve populations ranging from 31,000 (Collier County) to over 1.3 million (Dade County) and often establish satellite service centers in addition to the central headquarters. There are over 30 such permanent service sites in the state.

The staffs of these 25 County Health Departments range from 12 to more than 550 employees. Some of these health units have other physicians besides the county health officer; 12 have at least one public health dentist. Included on some staffs are health educators, sanitary engineers and technicians who operate small laboratories.

Palm Beach has one of the largest health departments in the state. The county has a reputation as a wealthy winter resort—yet the wealth is a veneer that covers a large population which includes indigent men, women and children equal in numbers to those found in many counties of comparable size, and a growing number of elderly people.

Palm Beach County has a land area bigger than either Rhode Island or Delaware. Most of the population is located along the eastern coastal region. In addition there are large agricultural areas with scattered population which produce millions of dollars of truck crops for the nation's tables. Many of these crops are har-



The policies of a large County Health Department are discussed and set by the health officer and his program supervisors in lively discussion sessions.

vested by large groups of migrants whose health needs become a responsibility of the county. Sugar cane fields are burned over to remove the foliage, contributing to the air pollution problem. It is in this environment that the Palm Beach County Health Department operates.

The county has no county hospital, no medical school, no interns and no medical services for the indigent population outside the County Health Department. Unlike the small county health unit, whose limited staff frequently knows many of its patients by name, the large County Health Department finds that patients can get lost in the metropolitan areas, the ghettos, migrant camps, or in the process of migrating from one place to another.

Continuity of Services

The Palm Beach County Health Department provides medical care and rehabilitative services for the indigent population in outpatient clinics, inpatient care facilities at the county home, in private nursing homes, patients' homes, and foster homes.

The County Health Department has developed a comprehensive health care program which stresses the continuity of services so patients do not get lost in the red tape. Through the outpatient clinics, the County Health Department gives quality care appro-

priate to the needs of indigent patients. Patients' records are kept at the outpatient clinics. There the patients can see a physician, talk to a social worker, confer with public health nurses who make sure the patients understand the doctor's instructions, and have their prescription filled at the clinic's pharmacy.

The County Health Department uses private hospitals for short-term medical care. Each of the hospitals is visited regularly by a public health nurse coordinator who serves as a liaison between the hospital staff and community agencies in promoting continuity of care. When the patient is discharged from the hospital, the public health nurse makes appropriate referrals to insure continuation of care in the County Home, private nursing home, or in the patient's own residence. She sees that he has home nursing care, if it is needed, and arranges for follow-up treatments.

A part of the comprehensive health care program is a fully-equipped rehabilitation center with physicians, physical and occupational therapists and other personnel.

Reorganization for Health Work

In order to better serve the people of Palm Beach County, the seven major divisions of the County Health Department were consolidated in 1968 into three divisions—Administration, Personal Health Services and Environmental Services.

* Division of Administration, which included Health Education and Administrative Services, was made responsible for the budget and finances, vital statistics, purchasing, supplies, building maintenance, personnel management, reception of the public, messenger and motor vehicle supervision, and administrative support of various federally-supported projects.

* Personal Health Services Division was subdivided into Medical Care, Dental Services, Maternal and Child Health, and Preventive Medicine. Public Health Nursing functions throughout Personal Health Services.

* Environmental Services Division included the Bureau of Environmental Engineering, with sections on Water Resources, Air and Water Pollution Control, Recreational Water, and Special Wastes; and the Environmental Sanitation Bureau, with sections on Community and Institutional Sanitation, and Housing (urban and migrant).

Meeting the Challenges of a Large County

While the county health director of a small county health unit is both administrator and clinician, the duties of the director of the large county units are multiplied by the sheer numbers of people in the community and their problems.

Dr. C. L. Brumback, director of the Palm Beach County Health Department, is one who delegates full responsibility to his highly-qualified supervisory staff. Policies of the health department are set in head-knocking sessions of the program supervisors. Subjects range in the sessions from making preparations to meet problems connected with a "Rock Festival" to planning an educational program for civic groups.

More and more of the director's time is taken up in planning for the health department. He has increasing responsibility and spends much time in coordinating the activities of the health department with a variety of community organizations. Dr. Brumback believes that the County Health Department, while representing the Division of Health, is part of the local family of county agencies. This is the strength of public health in Florida. The citizens of the county receive good health care because the County Health Department maintains good relationship with other state and county agencies and voluntary organizations. Through planning, county agencies with the same goals can coordinate their efforts.



Patients at the Palm Beach County Medical Care Clinic receive their medicine from the clinic's pharmacy.

Dr. Brumback serves on the boards of directors of several voluntary health agencies and advisory councils of other community agencies. No single agency has enough money to finance all of its programs but good work on the part of the County Health Department's staff members, and good relations with other agencies and the medical community have created a wide understanding and support for public health programs.

The County Health Department's problems and resources continually change. Dr. Brumback's primary duties are to study problems and needs of the community and strive to see that the problems are met. This is done through:

- * Problem identification and determination of objectives.
- * Setting of priorities in program development.
- * Program implementation.

One example of changing needs is the public's interest in environmental health. Until recent years many residents of the state were content with the environment as it existed and there was little thought given to pollution or its control. Now there is a tremendous public interest in environmental health. In 20 years public knowledge has increased to the point that people are willing to find a solution—the only disagreement is the method to control the pollution problems.

There are many ways a County Health Department can find problems in public health—through death records, morbidity reports, surveys, or someone in the community who has a problem. Once a problem is found or suspected, the health department and interested agencies conduct fact-finding studies to find the nature and extent of the problem, the age groups involved, and causes of the problem. Then a plan is worked out with various agencies of the community, taking into account the manpower needs and community resources. Priorities are set so that the most important problem will receive first attention.

All of the staff members of the County Health Department need to recognize all of the problems of public health. Public health nurses must know and understand enough about pollution control, solid waste, pesticides and radiation to provide comprehensive

County-Wide Cooperation

A project which has occupied much time and attention of the Palm Beach County Health Department staff was the establishment and construction of a new \$2 million mental health center. The Health Department helped stimulate interest in the center and staff members served on the board of directors, together with housewives, physicians, psychiatrists, psychologists, social workers, lawyers, businessmen and others. The community has already contributed \$500,000 in matching funds toward building the center which will provide comprehensive mental health care.

health care. If a nurse sees an environmental health hazard while making a home visit, she should be able to discuss it intelligently with the sanitarian in charge of that district, or with the sanitary engineer.

Likewise, workers in environmental services need to know enough about personal health services to enable them to answer simple questions or give an overall picture of the health department's services. Frequently members of the staff speak before civic or women's clubs and are required to call upon all of their knowledge of the agency to sell its programs.

Personal Health Services

Palm Beach County Health Department, as previously stated, is responsible for medical care of indigent patients. Most of this care is the responsibility of the clinic physicians, dentists and public health nurses. Assisting them are clinic and home health aides, and community health workers. Nutritionists, physical therapists and social workers also have important roles in meeting the needs of the patients.

Patients, including migrants, are seen in seven health centers, in addition to public medical care clinics.

All of the traditional nursing services are given:

* Home visits are made for communicable diseases; newborn babies and mothers are seen within 48 hours after returning from



A public health nurse confers with a teacher on health matters. Assistance is also given the teacher in planning health education programs.

the hospital; other health problems are evaluated at the same time.

* School visits are made to consult with teachers on health problems of students and to provide consultation in planning health education programs.

* General and special clinics are conducted for patients.

The public health nurses coordinate home health care in the metropolitan area of Palm Beach County with the Visiting Nurse Association. The Visiting Nurses serve Medicare and paying patients in this area and Health Department nurses provide care to non-paying and medical care clinic patients. In other areas of the county, home health services are provided through the Health Department Nursing Division which is certified by the Social Security Administration as a provider for Medicare. Physical therapy, occupational therapy, speech therapy, home health aide and social services are provided by the Health Department staff or by contract with the Rehabilitation Center for Children and Adults or the Visiting Homemaker Agency.

The public health nursing staff includes a director, assistant director, education director, and maternal and infant care coordinator, in addition to the regular staff of public health nurses. There

are also a nutritionist and a social worker (under the Maternal and Infant Care Project), and a physical therapist (in the home care program) who serve as consultants to the nursing staff.

Nursing services have shifted from an emphasis on home visits to increased clinic services, making possible service to greater numbers of patients without a corresponding increase in staff.

The nursing staff is involved in continuing program evaluation studies in cooperation with the University of North Carolina. Two studies concern the value of home visits to maternity patients and the public health nurse interview in a pediatric clinic. Another study was the attempt to define a more effective school health program. As a result of the first study, home visits to prenatal patients are now planned on a priority basis after medical and nursing evaluations have indicated what medical care the patient needs.

More time was made available when the nurses made fewer home calls and families were contacted and asked to come to the clinic. Frequently the nurse would make a home call—checking on a child at the request of a teacher, for example—and would find no one home. Once there was much time lost in visiting migrant camps—seeking specific individuals, making calls or conducting clinics. Now clinics with examining rooms and all the necessary equipment are accessible to migrants near their quarters or homes.

The health department found that when people were made responsible, they would keep appointments and follow their physician's instructions. Such people recognize and appreciate the services they receive. Mothers in the Maternal and Infant Care Project are grateful when they know that their hospital bill will be paid and they will be provided with medical care.

Migrant Health — Personal and Environmental

One problem the Palm Beach County Health Department has that many health departments do not face is about 40,000 migrants who move into the county each winter to harvest truck crops. About half of them live in migrant labor camps that range from excellent—with all of the required facilities—to those which could be greatly

improved. Other migrants live in marginal houses because of economic necessity. More and more of the migrant families are moving into urban areas rather than staying in camps, and crop growers are recruiting more and more labor from urban areas as "day haul" crews.

Nursing services provided for migrants are the same as those for residents, with concentration on public health nursing conference clinics in camps at times convenient to the migrants. The Maternal and Infant Care Project social worker and nutritionist participate in the migrant family clinics and with community groups in planning programs. A part-time nutritionist, located in the Belle Glade area, also works with migrants, and other low income patients, giving instruction in principles of good nutrition and in proper use of commodity foods.

General clinics are held two nights a week during the season and the staff sees between 300 and 400 patients each month. There are also family planning, well-baby and prenatal clinics during the day.

Environmental Services

The Palm Beach unit operates a total environmental health program that includes all the traditional programs and some which are relatively new. Examples of these are:

- * certification of ambulance vehicles and attendants;
- * inspection of nursing homes, schools, child care centers, homes for the aged, and hospital food services;
- * investigation of nuisance complaints and animal bites;
- * comprehensive food protection programs with inspection of food establishments, retail grocery stores and meat markets, and food processing plants;
- * inspection of dairies and milk processing and frozen dessert plants;
- * review of plans for public water supplies and sewage disposal plants;
- * supervision of solid waste collection and disposal;
- * inspection and approval of housing—including trailer parks, migrant housing, septic tank plans review;
- * supervision of operation of public water and sewerage systems;
- * plan review and sanitary supervision of swimming pools; and

* Civil Defense training and cooperation.

Some counties have special projects financed by state or federal money and local matching funds. Such projects are the air and water pollution control programs operated by the Palm Beach County Health Department under an authorization of the Florida Department of Air and Water Pollution Control.

The air pollution control program, which is partly funded by the U. S. Public Health Service, is geared toward taking ambient (moving) air inventories, evaluating air pollution sources, and enforcing laws based on air quality standards. Air sampling stations are located throughout the county to sample emissions. Major air pollution contributors in Palm Beach County are motor vehicles, sugar processing plants and steam-electrical utilities. The county has no heavy industry to contribute to the pollution.

Among other projects, the staff of the water pollution program is making surveys of streams and doing research into the feasibility of discharging treated sewage effluent into the Gulf Stream. This project is supported in part by the U. S. Department of Interior.

Between 1946 and 1968, Palm Beach County led the state in the amount of money spent per capita for sewage disposal. Largely through the efforts of the County Health Department, 80 per cent of the total county population, and 85 per cent of the urban population are on sanitary sewers. Over 90 per cent of the county's population uses public water supplies.

Florida has no laws regulating subdivisions but Palm Beach County has a directive which states that septic tanks are acceptable only in rural areas where lots are at least an acre in size. The County has both poor and good sanitary landfills. The Health Department, in cooperation with the county planning board, is working to develop feasible solid waste disposal methods.

County Programs—Old and New

There are many public health activities in which County Health Departments have pioneered. Some of these programs were set up with the assistance of the Division of Health which helped the counties to nurse the programs through infancy. Parental suggestions and additional assistance have continued over the years. Some of these programs are:

- * Hospital Services for the Indigent (which operates with state-county money) and Public Assistance Recipients Program (which uses state and federal money). These programs help medically indigent persons to have hospital care.
- * Reservation Indian Health Program. This program provides full medical care for Seminole and Miccosukee Indians residing on the four Indian reservations in Florida under a contract with the Division of Indian Health of the U. S. Public Health Service.
- * Arthropod Control Programs. These are carried on by County Health Departments or cooperating Mosquito Control Districts. Over \$7 million of local funds are spent for mosquito control; the state assists with \$1.6 million.
- * School health services—provided in most counties by the County Health Departments with support from local boards of public instruction.
- * Research and demonstration projects. These are carried on by many County Health Departments with financing from federal funds. They include: effects of pesticides on humans; medical



Air sampling stations are maintained by specialists in Palm Beach County. Motor vehicle transportation, sugar processing industry, and electrical-steam utilities are major contributors to air pollution.

care for Cuban refugees; medical counseling, referral and follow-up for the aged; early detection of cervical cancer; health services for children of low income families (Dade County); clinical services for mentally retarded children (Dade and Hillsborough Counties); hypertension program (Walton-Holmes-Washington Unit); high risk maternity and infant care (Dade, Broward, Orange, Palm Beach and 14 northeast counties); and projects providing health services for migrant workers, air pollution control, arbovirus research, tuberculosis and dog fly control.

Support from the Division of Health

The Division of Health, which by law is responsible for the carrying out of public health in the state, supports the County Health Departments with consultants and finances. It:

- * gives advice and assistance on everyday matters;
- * helps the county commissioners and County Health Departments to plan their budgets;
- * maintains a central audio-visual and medical and public health libraries;
- * publishes pamphlets and **Florida Health Notes**;
- * approves plans for public water and sewerage systems, and hospitals, nursing homes and homes for the aged;
- * registers practitioners for the healing arts;
- * licenses hospitals, nursing homes and homes for the aged, and pest control operators;
- * provides laboratory services;
- * encourages County Health Departments to participate in the inspection of X-ray and other radiation-producing machines; and
- * stimulates and assists in the evaluation of the County Health Department's own services to the community.

Public health is big business. Some of the budgets of the larger County Health Departments total over a million dollars apiece each year. Total receipts for all counties during the 1968-69 fiscal year were over \$17 million. Of this, some \$9.7 million was contributed by boards of county commissioners and \$4.3 million by the state and federal government. Additional money is also contributed by the Federal Government for special studies and programs, including migrant projects, maternal and infant care projects, air pollution control and children and youth projects.

More than 75 percent of the cost of operating the large County Health Departments is financed from local sources. The Division of Health is aware of this problem and has constantly urged the Florida Legislature to provide more money for the state's share of support.

The amount of funds received by each county is determined by the population, amount of local tax contribution, money received from the state and federal governments, and special local needs. The Division of Health also contributes toward the employer's share of Social Security and retirement for each employee of the County Health Departments.

Protecting Your Health

The Division of Health and the County Health Departments have one objective—to protect your health in many ways and every day. You may be aware of some of the times that you needed help from the County Health Department. The people at the beginning of our story:

Danny—the boy bitten by the cat;

Mr. Farnham—the man with the catheter;

Mrs. Douglas—the new mother and her baby;

Mr. Clark—the dog owner; and

Mr. Stott—the hog farmer

all had direct contact with the county health officer or physician, the public health nurse, sanitarian and clerk of the County Health Department.

You may not need the services of these people directly, but you do have their services, and you do benefit in many ways from the County Health Department—perhaps without knowing it. Some of the programs of the County Health Departments protect you when you are least aware of it, such as when you

- * eat in a restaurant—food sanitation program;
- * drink a glass of water—approval of the water system, periodical testing of the water;

- * sit on your patio in the evening—mosquito control program;
- * swim in a public swimming pool—approval of pool plans and supervision of its operation; and

- * attend a meeting—communicable disease control through immunizations.

This is the work of the Division of Health and County Health Departments—which is public health at the grass roots.

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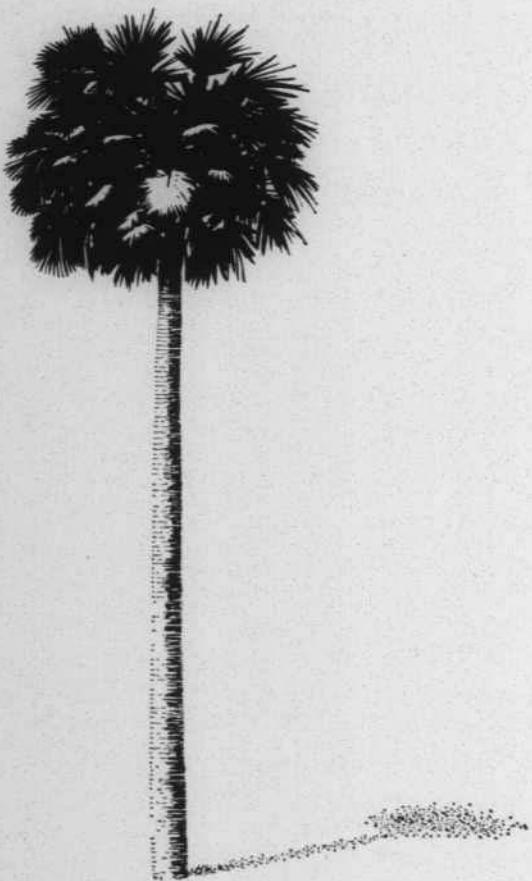
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Division of Health
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FLORIDA HEALTH NOTES



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*Poisonous Plants,
Pests and Vermin*

Poisonous Plants, Pests and Vermin

Have you discovered that you itch when you are around certain plants? Are you allergic to the bite of a mosquito or the sting of a bee?

Have you been ill after you handled a certain shrub? You probably know that the leaves, berries, fruit and blossoms of some plants are poisonous. Do you know which ones?

A total of 6455 cases of poisonings were reported to Florida poison control centers in 1968. Some 1840 persons were hospitalized. Of those poisoned, 127 persons were ill as the result of poison from plants.

Possibly many other persons were made ill from contact with plants but did not see a physician. Others suffered allergies, or skin irritation, from such plants as poison ivy or poison oak.

This issue of **Florida Health Notes** will tell you something about poisonous plants and about pests and vermin found in Florida which may annoy you or endanger your health. We also give simple first aid measures—but above all, you should take the victim to see a physician.

Many homeowners and gardeners are not aware that some of our common, most beautiful plants contain highly poisonous substances. Some plants are toxic only if a portion of the plant is eaten; some have substances that irritate the skin if they are touched. Some of these plants are cultivated because they will grow in places and under conditions where other plants will not survive.

We want to make it clear, we do not advocate the destruction of the poisonous plants listed in this issue of **Florida Health Notes**. The list in this publication is also not all inclusive. It contains only a description of the more common and more serious plants, pests and vermin.

Many of the plants are ornamentals introduced from other countries where their poisonous properties are well-known, their medicinal and sometimes lethal properties are appreciated and mentioned in the literature of those countries.

(Cover photo) Red and "white" poinsettias are popular in Florida as yard flowers and potted plants for Christmas. The milky sap can cause dermatitis of the skin and all parts of the plant are poisonous if eaten.



Oleanders are common as plantings in parks and along highways. All parts of the plant, as well as the smoke from burning shrubs, are poisonous.

Hazards to Homeowner

Only an extremist would advocate the banishment of all of the plants listed. However, Floridians and visitors to the state need to know about these plants. The principal hazard is not so much in the plants, but in people's unfamiliarity with them. The advisability of maintaining these plants can be best determined on their accessibility to children; the ability of children to understand the dangers of the plants and to distinguish between dangerous and harmless ones; and the extent of the grower to control his plants and dispose of the plants' discarded portions—such as the fallen fruit and trimmings.

Anyone who knowingly sets out poisonous plants around his property is usually aware of their hazards. When the property changes hands, the new owner may not be aware of the hazardous "pets" he has acquired, and may become an innocent victim of the plants. He may be left without a warning.

When a house is sold, the seller should inform the buyer of any perils from plants and the buyer should inform himself of the identity of the plants. If necessary, he should seek competent aid in identifying all plants and determining their good and bad aspects.

Parents need not teach their children to fear plants, but they must be on the alert for plant perils as well as dangers from other sources. Plants known to have toxic properties should be treated with the same respect as other common household hazards, such as matches, electricity, gasoline, insecticides, the contents of the medicine cabinet—and the automobile.

Individuals and Plants

Susceptibility of individuals varies greatly. Some may be highly susceptible, others less so and others seemingly immune. But im-

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munity can be temporary and so much is dependent on the physical condition of the individual. Susceptible individuals usually can diagnose the cause of their own troubles by close observation of the circumstances and condition under which their irritation or illness occurs.

The toxicity of plants also varies. Some plants are poisonous only at certain times of the year—varying with the season, stage of growth, cultural environment and weather conditions.

Some plants are poisonous only in certain portions—roots, seeds, sap, leaves or stalks. Others are poisonous in all portions. External poisoning may be dependent upon the degree of contact; internal poisoning may depend on the amount of poison substance consumed in relation to the weight of the person. Many of these plants have such an unpleasant taste or consistency that it is not likely that anyone would chew them. Some do not taste bad and therefore may be chewed or swallowed by an unknowing person.

A person may not suffer any ill effects if he handles the unbroken foliage or other toxic parts of the plant with the calloused and oily finger tips and palms of the hand. However, if an unprotected skin surface is touched by the plant material or by the crushed or oozing sap, the individual may suffer irritation.

A small amount of potent, toxic substance taken internally may be sufficient to make a small child ill; the same amount may not have any effect on an adult. Under normal circumstances, no adult would think of eating an ornamental plant but the possibility of children putting toxic materials in their mouths should never be underestimated. Children can consume some bitter or otherwise ill-tasting and unattractive plant parts with or without reason—even without the logical motivation of hunger. They may be just playing—or making a whistle.

In one instance, children were told by their mother **not to eat** a pan of tempting but harmful fruit they had picked. The children obeyed but undaunted, they proceeded to squeeze the fruit and were apprehended when they were about to drink the juice.

Is it Fatal? Time is Important

Some of our ornamental species are capable of causing fatal poisonings. Any delay may increase the potential for disaster. Time is the most important factor in removing the substance from the person's system before it is absorbed.

If a child, or adult, who is in seemingly good health suddenly shows signs of distress and is known to have handled plants or to have the opportunity to do so, his actions immediately prior to the illness should be investigated.

If a certain plant is suspected, it should be identified and a specimen supplied to the attending physician. Any assistance of this kind can be very important in aiding diagnosis. The symptoms of most poisonings cannot by themselves be distinguished from symptoms of many diseases.

The symptoms may range from simple discomfort or misery, such as a headache or respiratory difficulty, to acute illness which can cause loss of time from work or useful activity and expensive medical treatment. In some cases it may be impossible to discover which plant is responsible because so few people are familiar with the possible source of poisoning. Furthermore, a day or two may elapse before the symptoms of poisoning appear. A child may not be able to remember where he has been so that he cannot point out the poisonous plant.

POISONOUS PLANTS FOUND IN FLORIDA

Many of the plants listed below have been involved in poisonings in Florida. Included with each is the common name, scientific name, a description of the plant, and parts which produce the toxicity:

Barbados Nut (*Jatropha curcas*)

Description: This small tree found in South Florida grows up to 15 feet high. Leaves on smooth stems are up to six inches across with three to five lobes. Tiny yellow flowers produce yellow fruit which contains three seeds.

Toxicity: The seeds are poisonous and numerous cases of poisonings have occurred in Florida. Some persons have been hospitalized.

Bellyache Bush (*Jatropha gossypifolia*)

Description: This shrub grows to four feet tall. Leaves are dark purple when young and three-lobed. Stalks to leaves are long and with a type of hair. Small flowers are red, producing fruit (capsule) about one-half inch long which contains three seeds.



Barbados Nut

Toxicity: The seeds are poisonous and violent vomiting and purging (or diarrhea) may be-

gin from a few minutes to several hours after seeds are eaten.

Bitter Gourd, Balsam Pear (*Momordica charantia*)

Description: This is a vine with deeply lobed leaves. Flowers are yellow and fruit is pointed at each end. When ripe, the fruit is orange-yellow. It opens to show scarlet red seed coverings.

Toxicity: Eating the seeds or body of the fruit will induce vomiting and diarrhea.

Brazil Pepper (*Schinus terebinthifolia*)

Description: This is an ornamental, small spreading tree that has several leaves on a stem (pinnate) and bears red berries at Christmas time.

Toxicity: Sap of the plant may cause dermatitis in some individuals. Smoke from burning wood may irritate the respiratory system.

Carolina (Yellow) Jessamine (Gelsemium sempervirens)

Description: This woody vine, usually evergreen, is found in North and West Florida. Smooth leaves are opposite each other. Yellow, funnel-shaped flowers are fragrant. Seed pods are brown, flat capsules with several seeds in each.



Carolina (Yellow) Jessamine

Toxicity: All parts produce a poison which affects the nervous system and may cause respiratory failure. Children have been

poisoned by sucking the nectar from the flowers.

Castor Bean (Ricinus communis)

Description: This annual herb, found throughout Florida, grows



Castor Bean

up to 10 feet tall. Large, star-shaped leaves are four to 24 inches across and fine-toothed along the edges. Small flowers grow without petals in upright clusters. Some seeds are mottled, others black.

Toxicity: Eating the seeds may cause vomiting, diarrhea, abdominal pain, drowsiness, blue appearance of the skin, unconsciousness. Death may occur. Ingestion of one seed has been reported to cause fatal poisoning when thoroughly chewed.

Chalice Vine (*Solandra species*)

Description: A woody, hairy vine with large leaves and white to yellow tubular flowers, up to 12 inches long.

Toxicity: Leaves, sap and especially the flowers contain a potent narcotic which produces delirium, hallucinations and even death. If the sap is accidentally put into the eyes, it can cause temporary blindness.

Chinaberry (*Melia azedarach*)

Description: A spreading, symmetrical tree, with a dense crown, which grows up to 40 feet tall. It loses its leaves in the cooler months. Leaves are pinnate; young leaves are toothed. Purplish flowers are fragrant and produce yellow fruit with one seed.

Toxicity: All fruit, bark and flowers are poisonous, especially the fruit pulp. The poison attacks the central nervous system and causes death by paralysis. Patient may become unconscious, pale, cold and clammy, and have symptoms of suffocation.

Coral Plant (*Jatropha multifida*)

Description: A shrub which grows up to 15 feet tall, leaves are one foot across, deeply cut with a type of hair underneath. Flowers are scarlet. Yellow fruit usually falls when ripe. It contains three seeds.

Toxicity: Violent vomiting and purging (diarrhea) may begin within a few minutes to several hours after eating the fruit.

Crown of Thorns (*Euphorbia milii*)

Description: This is a low-growing, very thorny plant with milky sap. Leaves are few, usually at the end of new growth. Flowers are small, in long-stalked clusters.

Toxicity: The roots contain a toxic substance; the milky sap is very irritating to some people and may cause blisters.

Devil's Backbone, Slipper Flower (*Pedilanthus tithymaloides*)

Description: Shrub has smooth, green, fleshy stems which grow up to six feet tall, with milky sap. Leaves, up to four inches long, are pointed at outer end and alternate on the stem. Red flowers, clustered at the end of the branches, look like little red birds. The plant produces fruit with seeds.

Toxicity: All parts of the plant are poisonous. The sap can cause severe dermatitis and eating the seeds can cause violent vomiting.

Downy Thorn Apple, Metel (*Datura metel*)

Description: This annual herb, purplish in color and covered with long hairs, usually grows up to four feet tall. Heart-shaped leaves may be six to 12 inches long. Flowers are large, white or yellow, funnel-shaped and six to 10 inches long. Roundish fruit is covered with prickles. Seeds are small, flat and black.

Toxicity: Seeds contain the most poison, while flowers, stems, immature fruit and leaves contain lesser amount of poison which may cause enlarged pupils, drying and burning sensation of the mouth, thirst, difficulty in swallowing, fever, retention of urine and convulsions.

Dumb Cane, Dieffenbachia (Dieffenbachia seguine or *D. picta*)

Description: A shrub with green, fleshy stems that grows up to four feet tall. Leaves, on stalks up to six inches long, are variously mottled, spotted or streaked with white. Flowers are inconspicuous. Mostly a house plant but in South Florida may be planted outdoors.

Toxicity: Leaves and stems contain poison which may cause intense irritation of mouth and throat with salivation, swelling



Dumb Cane

of throat and temporary loss of speech. If swallowed, intense inflammation of stomach and intestines may occur.

Glory Lily, Gloriosa (*Gloriosa rothschildiana*)

Description: A vine which grows up to six feet tall and dies



Gloriosa

back in cooler months. Leaves prolonged into tendrils which enable the plant to climb. Flowers are crimson and yellow, lily-like and three to four inches in diameter. Fruit is in capsule form.

Toxicity: All parts of the plant are toxic, especially the tubers. The poison causes numbness of lips, tongue and throat. Nausea and diarrhea with blood may occur, followed by giddiness and temporary loss of the use of limbs. Unconsciousness and death may eventually occur.

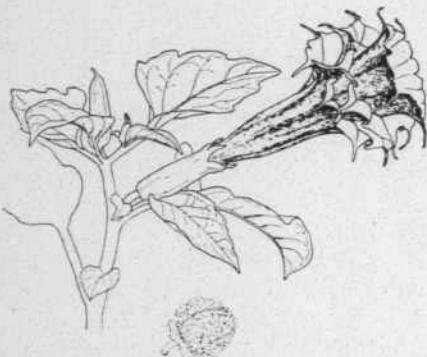
Jerusalem Cherry (*Solanum pseudo-capiscum*)

Description: This is a shrub that grows up to three feet tall with shiny leaves, four inches long. Flowers are white; fruit is yellow or scarlet, globular in shape and up to one-half inch across. This plant is usually grown as an ornamental potted plant.

Toxicity: Fruit contains a poison and should never be eaten. Poison produces headaches, abdominal pain, vomiting, diarrhea and unconsciousness. Convulsions and central nervous system depressions may occur.

Jimsonweed, Thorn Apple (*Datura stramonium*)

Description: This is a large annual weed growing up to five feet tall with several widespread branches and smooth, light green leaves up to eight inches long. The erect, short-stalked, funnel-shaped flowers flare out into five-pointed stars. The fruit is a dry, hard capsule covered with hard, sharp prickles. The pod splits into four sections each containing many seeds. The plant grows wild in old barn lots, along roadsides and refuse heaps, mostly in Northern Florida.



Jimsonweed

Toxicity: All parts of the plant, particularly the seeds, are poisonous. Children have been poisoned by eating the fruit or sucking the flowers.

Larkspur (*Delphinium ajacis* or *D. cheilanthum*)

Description: An ornamental herb that grows up to four feet tall with finely divided leaves, bunched at joints along the stems. Blue, white or violet flowers grow in long, tall stalks and produce seeds. The plant is a common garden flower.

Toxicity: The leaves, stem and seeds contain a poison which causes dryness of the mouth, nausea, vomiting, restlessness, itching skin and diarrhea.

Lantana (*Lantana camara*)

Description: This is an herb-like shrub that grows up to five feet tall. Stems are green to brown and squared, and at times armed with weak spines. Leaves are toothed, usually opposite each other, and three inches long. Flowers are white, yellow or pink—changing to orange or scarlet. Fruit turns from green to dark-blue.

Toxicity: The berries and leaves contain a poison which causes pupils of eyes to pin point. Diarrhea, vomiting, extreme muscular weakness and coma may follow.

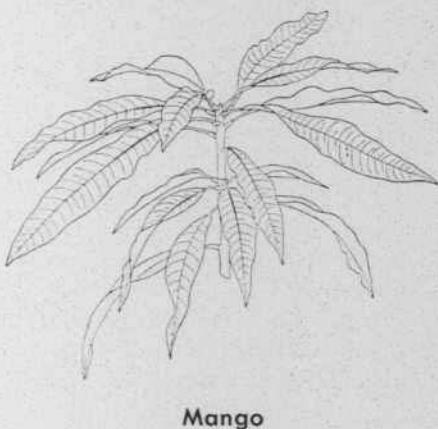
Ligustrum, Wax Privet (*Ligustrum japonicum*)

Description: A shrub or small tree up to 15 feet tall. Leaves are glossy, dark green up to four inches long. Flowers are small, creamy white in clusters. Fruit is a small berry. The shrub is often used as a hedge or base planting for houses.

Toxicity: Leaves and fruit contain a poison which causes nausea, vomiting, intense diarrhea, dehydration and unconsciousness. Convulsions may occur.

Mango (*Mangifera indica*)

Description: This is an evergreen tree found in South Flor-



ida which grows up to 60 feet high. Leaves are stiff and narrow. Flowers are pinkish white in irregular branched clusters. Fruit is large and smooth with a large, flat seed.

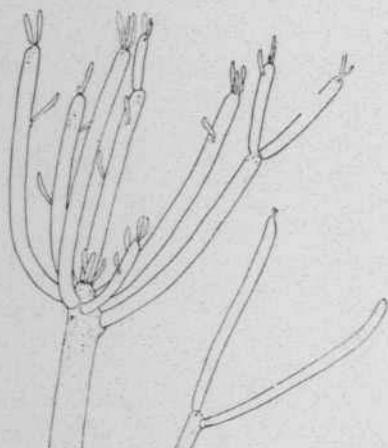
Toxicity: The sap of the mango tree contains a poisonous material that is very irritating to susceptible people. Eating mangoes may cause a rash around the mouth from eating the fruit. The plant may cause blisters and swelling very similar to poison-ivy poisoning.

Milk Bush, Pencil Tree (*Euphorbia tirucalli*)

Description: This is a shrub which grows up to 20 feet high with milky sap. It is popular in North Florida as a house plant. Small green leaves are inconspicuous at the end of branches and usually fall off as new branches are formed. Flowers are in small clusters. Sap flows freely from cut or bruised plant.

Toxicity: The milky sap and all parts of the plant are toxic. The milky sap is very irritating to the skin and eyes. It is poisonous if taken internally.

Morgan Lepiota, Green Gill (Lepiota morgani)



Milk Bush

Description: A large, white mushroom, common in Florida, that grows up to 12 inches across. It has brown scales when mature. Gills are white when young, green when mature.

Toxicity: All parts of the mushroom are poisonous, either raw or cooked. Severe inflammation of the stomach and the intestinal tract may occur. Since there is no easy way to determine poisonous mushrooms from edible ones, it is well to leave them all alone. Some species mean certain death.

Night Blooming Jessamine, Poison Berry (Cestrum nocturnum)

Description: A sprawling shrub that grows up to 12 feet tall with glossy, green leaves approximately eight inches across. Greenish-white flowers are tubular. Fruit is in the form of small, white berries.

Toxicity: The fragrance of the flowers can cause severe headache, nausea, dizziness and respiratory irritation to sensitive persons. The white fruit is said to be poisonous.

Oleander (Nerium oleander)

Description: This is a shrub that grows up to 20 feet tall with heavy, green stems. Leaves are stiff and pointed, in whorls of three, and up to eight inches

long. Single or double flowers may be red, white, yellow or pink. The blossoms are three inches across.

Toxicity: All parts are poisonous. People have been poisoned by using branches to skewer meat or stir food. Symptoms are nausea, vomiting, colic, dizziness, drowsiness and decreased pulse rate. The poison may cause respiratory paralysis and death. Contact with the plant can cause dermatitis. The smoke of burning oleander is also poisonous.



Oleander

Plants Poisonous To Animals

Many of the same plants that are poisonous to humans are also poisonous to animals. Most domestic animals will not eat these plants under normal circumstances, but may do so under the following conditions:

- when the animals are starving;
- when they are not receiving something that they crave and they are not getting it in their diet, such as a certain mineral;
- when pastures are overgrazed or food supply short because of a drouth;
- when the animals have access to waste and trash piles;
- when the animals are grazing on newly plowed areas that have exposed plant roots;
- when roots of water plants are exposed in dry water holes;
- when poisonous plants are accidentally included in their food (hay); and
- when the animals are just curious.

Poinsettia (*Euphorbia pulcherrima*)

Description: The shrub grows up to 10 feet tall. Leaves are lance-shaped, alternating on the stem. Colored leaves form the showy part of the plant. Flowers are small, greenish with yellow glands. In Florida the fruit is seldom formed. The plant is grown as a yard flower around many homes and widely used as a Christmas potted plant.

Toxicity: The toxic substance is found in all parts of the plant. The milky sap can cause dermatitis and blisters on sensitive skin. Taken internally, the poison can cause inflammation of the lining of the stomach and intestines. Children have been killed by eating stems or leaves of this plant.

Pokeweed, Pokeberry (*Phytolacca americana*)

Description: This is a robust herb-like plant growing up to six feet tall from thick, fleshy roots. The stems are much branched at the top. The lower leaves are a foot or more long, gradually diminishing until the upper ones are about three inches. The white flowers are borne in narrow clusters several inches long. The flattened, purple-black berries are up to one-half inch in diameter and contain several seeds. The plant occurs throughout Florida, most often in open hammocks and along fence-rows.



Pokeweed

Toxicity: All parts of the plant, particularly the roots and berries are toxic. Nausea, vomiting, purging, retching and severe convulsion occur. Death may re-

sult from paralysis of the respiratory organs. Children have been poisoned by eating the berries and roots.

Poison Ivy (*Rhus toxicodendron*)

Description: This is a vine or low bush with toothed leaves in groups of three. Flowers are small, greenish-white. White fruit is waxy and round, growing in clusters. A good motto, "Leaves three, leave it be." One should also be wary of any plant or vine having white berries.

Toxicity: A poisonous substance is found in all portions of the plant, especially the sap. It causes an itching or burning sensation

which may occur in a few hours or up to five days after touching the vine. Severe exposure may produce abscesses, enlarged glands and fever.

Poisonwood, Coral Sumac (*Metopium toxiferum*)

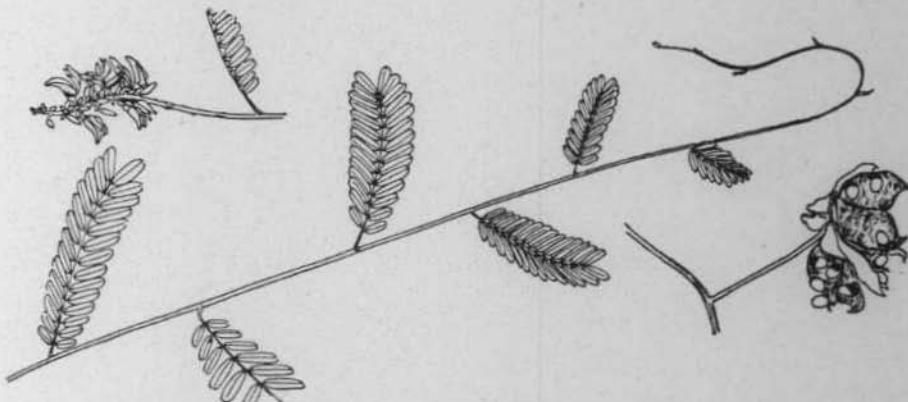
Description: Common in South Florida, this is a shrub or tree growing up to 35 feet tall with leathery, oval, alternating leaves that are up to three and one-half inches in length. Small flowers are yellowish-green; the orange-yellow, oval fruit has one seed.

Toxicity: All parts of the plant contain a poison, especially the sap which may contaminate clothing, shoes, etc., for months. First symptoms are itching or burning sensation which may occur in a few hours or up to five days after exposure. Severe reactions may produce fever, abscesses and enlarged glands.

Rosary Pea, Crabeye Vine, Jequiriti Bean (*Abrus precatorius*)

Description: A woody, climbing vine with alternating leaves about four inches long. Flowers are pea-shaped which produce flat pods with scarlet seeds with jet black spots. Seeds are sometimes used in necklaces.

Toxicity: The seeds are poisonous and if thoroughly chewed the results could be fatal. The poison causes weakness, trembling hands, nausea, vomiting and severe diarrhea, cold perspiration and small and accelerated pulse.



Rosary Pea (Jequiriti Bean)

First Aid Measures—If Poison is from Plants

If poisonous substance is on the skin: wash thoroughly with soap and water as soon as possible.

If poison is swallowed: give patient a glass of water with raw egg white, or a glass of milk to make it easier to induce vomiting. This will also dilute and generally neutralize the poison.

To induce vomiting: tickle the back of the throat with a blunt end of a spoon, or the finger; or give a strong solution of salt in warm water. After vomiting, the patient's head should be positioned lower than the body so vomit will not be drawn back into the lungs. The vomited substance should be saved for analysis.

TAKE THE PATIENT IMMEDIATELY TO THE EMERGENCY ROOM OF A HOSPITAL OR TO A DOCTOR.

Sandbox Tree (*Hura crepitans*)

Description: This tree grows up to 50 feet high. Young trees are covered with sharp pointed spines. The sap is milky and acrid. Leaves are heart-shaped, thin and alternating, up to five inches across. Flowers are small and reddish. Fruit, about three inches across, contains 10 to 14 seeds. When mature, the fruit may explode violently.

Toxicity: Seeds and sap contain a poison that causes nausea, stomach pain, vomiting, bloody diarrhea and possibly death. The sap can be irritating to the skin.

Top Primrose (*Primula obconica*)

Description: This is a winter-flowering ornamental plant, grown in greenhouses and imported by florists for sale during the spring months. The individual leaves are nearly round, about two to four inches long, blunt at the tip and heart-shaped



Top Primrose

at the base. The flowering stems, two to six in number, rise from the center of a rosette of leaves. The pale pink or rose-colored flowers are produced in a cluster of five or more at the top of the flower stalk.

Toxicity: The hairs on the stem and leaves contain a substance irritating to many people. Handling the plants may result in itching dermatitis resembling ivy-poisoning but usually less severe.

Tung Oil Tree (*Aleurites fordii*)

Description: This is a tree with syrupy sap that grows up to 25 feet in North and West Florida. The alternate leaves are heart-shaped and up to 10 inches long. The pale pink or white flowers are one inch across and the fruit on drooping stems contain three, chestnut-like seeds. The tree is sometimes planted for shade.

Toxicity: All parts of the tree contain a poison which causes inflammation of the stomach and intestinal tract when taken internally. Purging can be very severe.

Water Hemlock, Cowbane (*Cicuta curtissi*)

Description: Always found growing near water, this herb has hollow stems that grow up

to seven feet tall. The roots are large and swollen with air cavities. Leaves are alternate and compound; flowers are small and white, in umbrella-shaped clusters. Fruit is small and dry.

Toxicity: The roots are especially poisonous and people have died from eating the parsnip-like roots. Children have been poisoned by making whistles from the hollow stems. The poison causes abdominal pain, nausea, vomiting, diarrhea and violent convulsions.



Yellow Allamanda

Yellow Allamanda (*Allamanda cathartica*)

Description: Found in Central and South Florida, this vine

grows to 10 feet tall and is often pruned to a shrub. The leaves, up to six inches across, are glossy and thick with smooth edges. The yellow flowers are two to four inches across, bell-

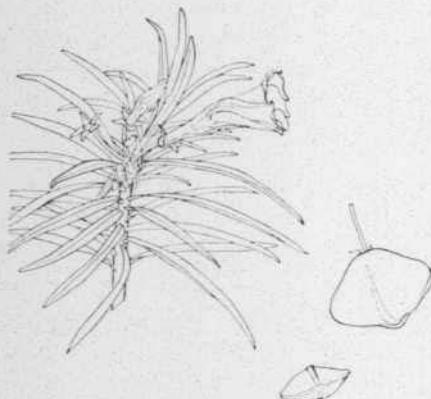
shaped and in clusters. The fruit is a round, prickly pod.

Toxicity: All parts of the plant are reported poisonous. The milky sap can cause dermatitis on susceptible people.

Yellow Oleander, Lucky Nut (*Thevetia peruviana*)

Description: This is a shrub or small tree with a short trunk and a dense crown. Leaves are dark green, glossy, up to one-half inch wide and six inches long. Yellow tubular flowers grow up to three inches long. Green, fleshy fruit turns yellow when ripe and then black. The seeds are brown. The nut is sometimes sold as a good luck charm.

Toxicity: All parts of the plant contain two deadly heart poisons. Contact with any part of the plant can cause severe dermatitis to some people. If eaten



Yellow Oleander

it may cause vomiting, cold clammy skin, feeble pulse, convulsions and possibly death.

OTHER POISONOUS PLANTS

The Nightshade Family

White potatoes and tomatoes, which make up a great part of our diet, are members of this family. In general, the green parts of the plant are very poisonous and drugs, such as belladonna and atropine, are derived from plants of the Nightshade family. All berries, except the tomato, are poisonous until ripe. The "eyes" and new sprouts of the Irish potato contain a poison; tubers showing green after having been exposed to the sun are unfit for food. Several cases of fatal poisonings from this source have been reported.

The Amaryllis and Iris Families

These families of plants include the common amaryllis, zephyr-lily, century plant, spider lily and such flowering plants as narcissus and daffodil. Most of these plants are poisonous if eaten. Care should be taken that bulbs are never left where the children or pets have access to them. The rootstock of the iris family contains a strong purgative agent and some people may develop a skin rash from handling the roots or other parts of the plant.

The Palm Family (Arecaceae)

A good general rule to follow is that all palm seeds and fruits are poisonous to eat. The exceptions are coconut palm, date palm and jelly palm. The juice of the fishtail and other palms may be irritating to the skin. The tubers of such ornamentals as "elephant ear," dasheen and other related plants are poisonous when raw. Leaves may produce skin irritation. Unripe fruit is poisonous.

PESTS AND VERMIN

In addition to poisonous plants, there are various insects and animals that annoy man, or whose sting or bite is painful or even fatal. Included in this list are bees, spiders, scorpions, ticks, fleas, flies and mosquitoes, fire ants, caterpillars and centipedes. Millions of people are bitten by venomous arthropods or insects in the United States each year. Public health officials estimate that about 25,000 of these persons are seriously injured and some 20 to 30 persons die.

There are four types of poisons produced by insects and arthropods:

- vesicating toxin — which burns the skin and produces blisters;
- neurotoxin — which attacks the central nervous system and may cause death through respiratory paralysis;
- haemolytic toxin — which causes breakdown of elements of the body's circulatory system and may kill large blocks of tissue; and
- haemorrhagic toxin — which prevents the clotting of the blood.

Bees, wasps, yellow jackets and hornets are the most common source of serious stings that are painful. Humans differ greatly in their reaction to the sting of these insects. This may be due to a

hypersensitivity to the venom injected by the insects or resistance developed by previous contact with the substance.

Honey bees will sting only as a last resort or when a human interrupts them at their work or when they are swarming. On the other hand, wasps, hornets and yellow jackets are unpredictable, belligerent and swordsmen of rare skill. If you should bump into, step into, or harm their nests, you will find yourself in trouble.

Spiders are common throughout the world. Most are "field" spiders which feed on other insects and are in general beneficial to man. A few species, such as the black widow and brown recluse spiders, have painful bites which may incapacitate an individual. The venom of the black widow spider attacks the nervous system and produces excruciating pain, violent abdominal cramps, profuse perspiration, difficulty in breathing or talking. The bite is rarely fatal but it should be treated by a physician. The venom of the brown recluse spider (which has not yet been found in Florida but has been found in Central and Southern United States) causes blisters, affects the circulatory system and severely damages the tissue area around the bite. Death is exceedingly rare.

Venomous scorpions are common in Florida but they rarely sting man and then only when provoked. Few species are deadly, but all scorpion stings should be considered dangerous. Scorpions are usually found outdoors but they may invade the house looking for insects on which to feed.

The **imported fire ant** is similar to other ants but different in its habits and ferociousness. The fire ants build mounds with a number of entrances (unlike other ants) and when they are disturbed, they pour forth in thousands stinging anything in the area. A fire ant may sting its victim three to six times. The sting brings immediate pain; a wheal (fester) appears within a few minutes. A pinkish area may persist around the sting for several weeks or until scar tissue forms. A victim with reaction to the stings should be taken to a physician. Fire ant mounds should be treated with insecticides but the insects will increase rapidly if not given prompt attention.

Lice, during feeding, inject a saliva into the skin that causes considerable itching. Severe infestation may lead to scratching and secondary infections.

Fleas also inject a saliva into the skin that causes severe itching in some people, but no reaction in others. Numerous bites may produce a rash. Although fleas may prefer another type of host, such as a dog, they will bite man readily in the absence of their normal animal host. Flea bites should be disinfected and, if a reaction should occur, a physician should be consulted.

Ticks, mites and bed bugs are also blood-sucking insects that cause reactions ranging from mild irritation to paralysis. Tick paralysis is usually produced by engorged female ticks as the results of a poison injected during feeding. Small children with long hair are most subject to this condition because of the hair that conceals the ticks. Scabies (a skin disease) is the most important condition caused by mites. Some people are sensitive to the poisonous saliva injected by bed bugs, while others may be hardly aware of the bites. Bed bugs can cause nervous disorders in sensitive individuals, and contribute to ill health, especially in children and the elderly.

Not all **flies and mosquitoes** bite, but those which do can cause serious trouble. The insects pour a toxic saliva into the body while feeding to prevent the clotting of the blood. The saliva attacks the circulatory system. Stable flies are commonly around homes and bite severely. Black flies bite viciously, often attacking in large numbers. Mosquitoes, sandflies, dog flies and other biting insects also commonly attack man and cause great discomfort and disease. In some individuals the bites produce severe lesions, high fever and even general disability or encephalitis.

Centipedes, millipedes and caterpillars may cause painful bites or injury to persons handling them. Many species of centipedes are capable of inflicting venomous bites on man but death seldom occurs. Both the millipede and caterpillar exude a poison that may cause blistering. Some millipedes can squirt venom some distance and cause injury to the eyes as well as the skin. Poison on the stinging hairs, egg covers and cocoons of caterpillars may cause mild to severe contact dermatitis, respiratory pain, headaches and convulsions.

How to Treat Injuries Inflicted by Insects

First aid for injury produced by poison from insects depend upon the nature of the venom. But generally the patient should be

taken to a physician. If this is not possible, call a physician immediately.

If swelling or discoloration occurs at the site of the injury, the poison is probably one that produces blisters, causes damage to the circulatory system, or prevents the clotting of blood. The patient should be kept warm and quiet.

If little or no swelling occurs at the site of the injury, the venom is one that attacks the nervous system. Apply ice to the site, or if possible, immerse the affected part in ice water repeatedly for short periods.

If shock symptoms occur, the situation is critical and a physician must be reached at once.

Prevention of Insect Bites

Education, especially of children, to avoid poisonous insects is the best technique to prevent injuries. Also the homeowner should screen the house and keep it free of rodents, pest birds and bats. The premises should be kept clean (free of litter, garbage, manure, weeds, loose rocks and debris); rugs should be vacuumed and floors cleaned at least weekly if pets are allowed in the house; all mite-infested food should be destroyed.

Persons sensitive to stinging insects should wear light-colored, smooth fabric clothes (avoiding leather and suede); keep hair covered; avoid scented cosmetics; and stand still or move very slowly when approached by bees, wasps or hornets.

Wild Animals as Pets

The practice of acquiring and keeping wild animals as pets has become of concern to public health officials. Some have proposed policies opposing this practice because of health implications for both humans and animals.

Large segments of the American public are affluent, dwell in heavily populated areas, and have developed sophisticated standards in the selection of animals and birds as household pets. Commercial promotion has glamorized the keeping of exotic and native wild animals as pets.

Diseases transmissible to man are common among wildlife. Monkeys may carry hepatitis, malaria, yellow fever, tuberculosis and other diseases which are common in the areas from which the

The Poisonous Toad

South Florida has an unwelcomed resident, a giant toad (*Bufo marinus*) which exudes a cobra-like venom through glands on its back. Yellowish-brown in color with black markings, the toad is a night-feeder which devours large quantities of insects. But it has proved lethal to small animals which attack it. The venom has several effects upon humans—attacking the nervous system, increasing blood pressure and heart action, causing nausea, severe headaches and paralysis. The toad is found as far north as Palm Beach County. Although health and agricultural officials are watching the situation, extermination would be extremely difficult because the pest scorns any type of poison bait.

animals originate. Animals and birds frequently transmit salmonellosis. Primate shigellosis is a potential human health hazard. Birds can transmit micro organisms causing disease, such as psittacosis.

The temperament and breeding of such imported animals as lions, tigers and cheetahs, and such native animals as bears, wolves, and foxes, make them unsuitable for living in households with humans. The animals are deprived of the association with their own kind and natural environment. Physical injuries and death of humans are widely reported but there is no central fact-gathering program to ascertain the extent of these injuries.

Raccoons and skunks purchased as family pets have developed rabies, turned on their new owners, and inflicted serious bites, causing them to have to undergo the painful rabies treatment. Even pet hamsters, rats and mice may be quite troublesome.

People frequently acquire exotic or wild pets on an impulse without proper knowledge or facilities for care, control and confinement. Many of these pets escape. Others are frequently freed in a careless or illegal manner when the pet becomes too large or the care of the pet becomes a nuisance.

Florida is trying, at the present time, to cope with two new exotic life forms. One is an oriental "catfish" which can walk on land and threatens to destroy the state's multi-million dollar sport fishing industry. The second is related to the introduction of a giant snail which may become a threat to the agricultural industry. Both forms of life came to the state as exotic pets. The "catfish" escaped

from the dealer's pools; the snails were deliberately freed by a youthful owner.

The possibility of piranhas being introduced into the waters of Southeastern United States was demonstrated by the confiscation of a number of the small flesh-eating fish in a Tennessee pet shop. A well-intending woman, who read in the news media that her pet piranhas were illegal, planned to flush her fish down the drain. Fortunately, the pets were confiscated before they were released.

The U. S. Congress has passed a bill to prevent the importation of fish or wildlife that, in the opinion of the U. S. Department of the Interior is faced with extinction. Some animals face this problem because of the destruction of their habitat; over-use for commercial or sports purpose; the effect of disease or over-hunting by its enemies; or natural or man-made factors. One of the more common uses of foreign animals is as pets or for commercial use. The law allows importation of these species only for zoological, educational and scientific purposes, or for the propagation of the species for its preservation.

Coexisting with Plants and Insects

The way to coexist with poisonous plants and stinging and biting insects and arthropods is to treat them with respect. We do not advocate their extermination but one is wise to learn the identity of plants and insects around the home and which ones are poisonous. Some plants, such as Spanish bayonet (*Yucca*) and cactii are not poisonous but are dangerous because of needle-sharp leaves and spines which can puncture the eye, or the skin and permit infection. These should be treated with respect and not grown where there are children or pets.

Children should be taught not to put anything into their mouths except food. Adults, too, should refrain from chewing on leaves or twigs of plants when walking through a garden or woods.

Bees, more than other insects, perform an important function in the world. Without their services in pollination of growing things, we would have few flowers and skimpy crops.

If a person comes in contact with a poisonous plant, consumes part of one, or has an encounter with a poisonous insect, he should carry out first aid measures and then consult a physician. Time lost in doing so may mean the difference between life and death.

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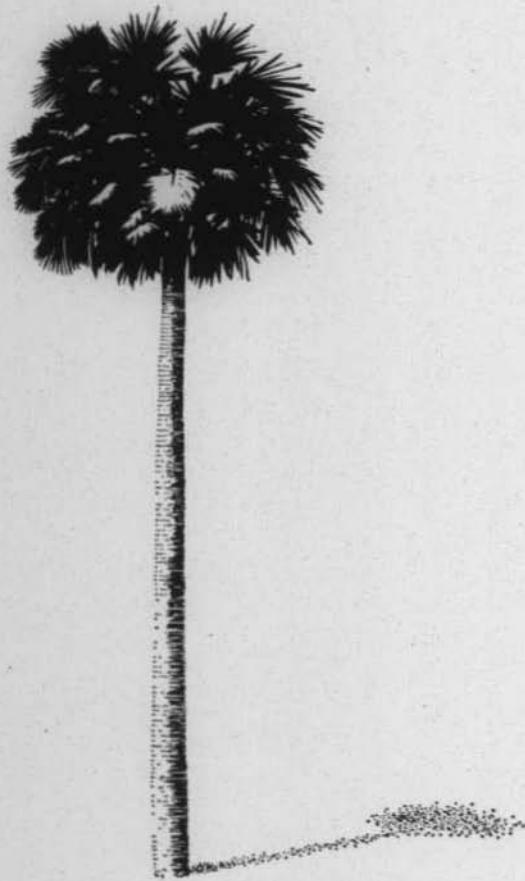
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FLORIDA
**HEALTH
NOTES**



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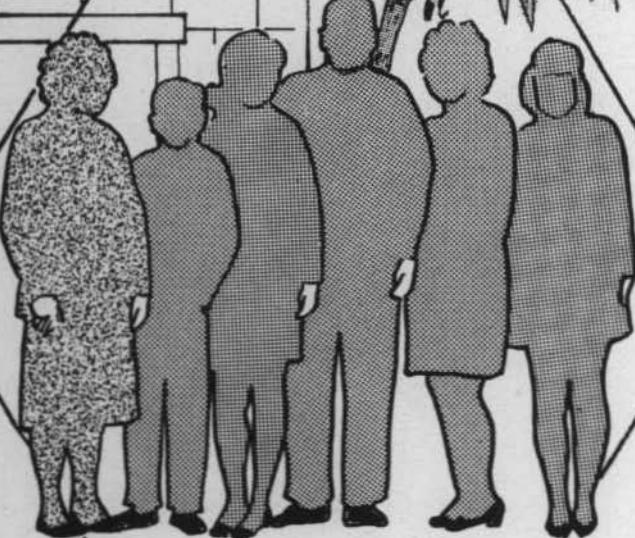
MARCH

1970

The Division of Health

Guarding the People's Health

AIR
LAND & WATER



HOME, SCHOOL
& WORK

PRODUCTS &
SERVICES

MAN'S THREE ENVIRONMENTS

The Division of Health Guarding the People's Health

The Price family lives in three intermingling environments. It dwells in the environment of air, water and land which affects everyone around. The environment of home, school, place of employment and recreation affects members of the family as individuals and as a group. Products and services the Price family consumes or uses also affect the health of its members. All of these elements react on the family at the same time.

For a long time, the environment has been thought of as being a series of unrelated segments. Therefore efforts to deal with the problems of each have been partial and uncoordinated. A number of governmental agencies, private organizations and businesses have expressed interest in regulating or controlling parts of these environments for the protection of the Price family and all Floridians.

The Division of Health, since its inception as the State Board of Health in 1889, has been involved in protecting the environments of the citizens of our state. Other state and federal agencies are also involved in certain instances.

This issue of **Florida Health Notes** will tell you how the Division of Health of the Florida Department of Health and Rehabilitative Services protects the health of the consumer in the areas of food hygiene, cosmetics and drugs, water supply, waste disposal, bedding, hospitals and nursing homes, and radiation—just to name a few.

(Cover photo) Three environments affect the health of the Florida family. The Division of Health is involved in protecting the family from many unhealthy aspects of these environments.

The Division of Health in Consumer Health

The Division of Health is charged by Florida Statute 381 to protect the health of Floridians. "Health" in the words of the World Health Organization is "A state of complete physical, mental and social well-being, not merely the absence of disease or infirmity."

Therefore, the Division of Health is not only interested in communicable and chronic diseases, in which it has a primary interest, but it is involved in the protection of every Floridian and visitor to the state from bad water, unwholesome and adulterated foods, watered or unsafe milk, poor housing, disease-carrying animals, poorly-operated and unsafe nursing homes and hospitals, and radiation from radioactive materials.

One of the main reasons for the inspecting and regulating of many businesses and services is to protect the public from substances and conditions hazardous to its health. Another reason is to protect the consumer against fraudulent practices and impostors. Laws of Florida call for the testing of foods to make sure pure food reaches the Price family's table. The Division of Health is required by laws to inspect public buildings, swimming pools, restaurants and recreational camps to make sure facilities, surroundings and equipment are safe and clean for the family's use. The chapters of Title XXX, Florida Statutes, set up laws for the examination and registration of professions and vocations. Included are physicians, attorneys, dentists, cosmetologists (beauty operators) and barbers—just to name a few.

FLORIDA HEALTH NOTES

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The environment of housing, school and work influences an individual's health. The Division of Health tries to improve the housing of many groups — especially the migrants.

The Division of Health has been interested in consumer health since it began as the State Board of Health. Although there were no specific laws at the beginning, the State Board of Health's **Annual Report** of 1903 mentioned work in the field of "sanitary science" in residential environment.

Food and drug regulations in the United States began about the turn of the century. The average consumer of that period lived in a predominately rural society. He purchased most of his food in the form of basic products from local sources. The bulk of his food supplies were fresh and free of invisible additives. Many foods were completely cooked before eating. There were few prepared or frozen foods. Many of the drugs—available at the time were largely ineffective.

Because food products, drugs and consumer services have changed since the early 20th Century, governments have had to continually change the laws to keep up with the changing times. Laws which were passed to protect the consumer of 1910 against the negligent, ignorant or fraudulent producer or distributor of the period are now protecting an extinct consumer against a set of hazards which no longer exist.

Years of Competent Assistance

Over the years, multiple city, county and state health functions have been forged into a single non-duplicating program under the Division of Health and the county health departments.

Fields of action in which the Division of Health protects the consumer include control of communicable diseases; protection of public water supplies; control of food-related diseases, hazardous products, waste disposal and pesticide operators; protection against radiation; and control of rodents and insects, bedding, shellfish, drugs and cosmetics.

The responsibilities for these programs are in the hands of "people-oriented" professionals and technical workers who are highly trained and qualified to control situations potentially dangerous to the public health.

In recent years, non-health agencies have become more engrossed in attempting to administer health and sanitation programs. This trend could lead to serious complications as the non-health agencies do not have the professional competency to make highly technical judgments involving the health of the people of Florida. These agencies lack also the responsibility and may therefore range far afield without concern for overall effect.

To give these non-health agencies such skills would necessitate duplicating professional and technical staffs of existing state agencies. Such an effort would be most unwise in light of the scarcity of available health personnel and the tremendous costs involved.

The vast majority of primary health workers are headquartered in the county health departments in order to best serve the people. These include physicians, dentists, nurses, sanitary engineers and sanitarians. On the state level, laboratory workers, sanitation consultants, veterinarians and other professional and technical workers provide specialized services on a state and regional basis.

The Environment and Products and Service

Food is one of the most important products consumed by the Price family and all Floridians. Because food is one of the most common ways of transmitting disease, the principal purposes of food hygiene programs, as carried on by the Division of Health and county health departments are

* to prevent food borne diseases—which are often epidemic in type; and

* to protect the consumer from environmental hazards that may be transmitted through food.

There are some 40 diseases which may be food related. These include bacterial infections, bacterial toxins and viruses. There are also dangers from chemical poisons, parasites and poisonous plants and animals. Health officials estimate that on the national level only five per cent of the food-related illnesses is reported. Florida doubtless has a similar figure. During the past decade there was an average of 2100 cases of food-related illnesses reported in Florida each year. The preliminary total for 1969 is 3838 reported cases—a significant increase. This may represent only five to 10 per cent of the actual number of cases.

Food service establishments are inspected under the Division of Health's food sanitation program. A county health department sanitarian and restaurant manager discuss the problem of a kitchen's ventilating hood.





Meat markets' equipment, building, food handling practices and personnel are checked by sanitarians under the food sanitation program.

The Division of Health Protects the Consumer

In order to protect the Price family, county-wide food sanitation programs are conducted by each of the 67 county health departments under medical direction. These activities cover all types of food service establishments, including restaurants, soda fountains, cafeterias, school lunchrooms, hospitals, nursing homes and such common carriers as railroads, airplanes and buses; as well as such establishments as food processing plants, food warehouses, grocery stores, meat markets and shellfish plants. During 1968, sanitarians from county health departments made an average of five or more visits to each of the more than 31,800 such establishments in Florida.

The Division of Health provides complete laboratory services and technical assistance by highly qualified sanitation consultants, veterinarians, medical epidemiologists and other scientific specialists. Public health physicians, nurses, sanitarians and laboratory workers are constantly on the alert for suspected communicable diseases. They have an interest in the health of food workers, food establishment patrons and consumers of food products.

What does the Division of Health do when a county health department reports an outbreak of food poisoning or infection?

Morbidity reports from physicians, county health departments and other sources may give the first indication of an unusual incidence of disease. But usually the call concerning a food-borne illness demands immediate attention.

Reports of suspected food-borne diseases are followed up with investigations by county health departments, with the assistance of epidemiologists from the Division of Health. Epidemiologists are physicians especially trained in control of preventable diseases. Such an investigation commonly requires the procuring of specimens from the patients involved for laboratory examination, and in this the public health nurse is needed.

Sanitary investigations, conducted by the sanitarians, together with the health physician and/or nurse, look for the food or food-handling practices which caused the illnesses. Sometimes food from its original source is the cause of a disease outbreak, but more frequently, the cause is contamination of food by a food-handler. Special examination of food handlers may be necessary to detect if any of them are carriers.

Laboratory technicians examine specimens from patients and samples of food and water in one of the regional laboratories operated by the Division of Health.

A county health department food service coordinator instructs food handlers in a training class. Over 50,000 food handlers have received special instruction in such classes during the past 12 years.



Information obtained through the investigation of food-borne disease is utilized in correcting defects in the food-handling practices of the establishment. Continued supervision by the county health department assures that similar outbreaks are avoided.

To protect the Price family from poor food handling, the Division of Health, through the county health departments, conducts courses of instruction for food workers. Sometimes these courses are held in conjunction with a junior college. The instructors may be qualified sanitarians, health educators or college professors. More than 50,000 food workers have been trained during the past 12 years and during 1968, over 4570 food workers attended the special classes.

Each of the 67 county health departments conducts sanitary inspection of all food establishments in its jurisdiction. The cleanliness of all facilities, storerooms, refrigerators, shelves, floors and equipment is checked. But the inspection does not only relate to the cleanliness of the facilities and equipment, but to practices in handling the food supplies, food protection and personal hygiene of the workers. It may also extend to a consideration of water supply, sewage and garbage disposal, and rodent and insect control. The handling of special problems in these fields may call for assistance of health department staff members who have received special training in a particular area.

The approach used by the county health department in the inspection of food handling establishments is first of all to aid the operators and employees through education and persuasion to remedy defects in the food-handling process.

Laboratory Protection for the Consumer

Public health laboratories operated by the Division of Health in Jacksonville, Tampa, Miami, Pensacola, Tallahassee, Orlando

and West Palm Beach, along with county laboratories in Broward and Pinellas County Health Departments, performed some 459,-

Milk samples are prepared for analyzing in a Division of Health laboratory. Over 450,000 examinations were made on samples of food, water and utensil swabs in 1968.

000 examinations in 1968 on samples of

- *dairy products;
- *water from water systems and swimming pools;
- *water from pollution surveys;
- *foods (for sanitary quality);
- *foods (for food poisoning) and
- *utensil swabs.

Over 58,700 specimens from patients were examined for various gastro-intestinal infections during 1968. These specimens yielded a total of 1459 positive reports for bacteria known to produce serious disease which is highly infectious and transmissible through food and water.



The old State Board of Health opened the first laboratory in 1903. Samples of water and milk have been tested regularly since those early days but now advanced technology has made possible more sophisticated examinations of specimens from the environment, including radiation in milk and the atmosphere.

Enforcement of the Sanitary Code

The policy and practice of the Division of Health in enforcing the State Administrative Code, under which the food hygiene rules fall,

is to utilize legal means only when the desired results cannot be obtained promptly and effectively through education, encouragement and persuasion. Rarely does a county health department have to take the proprietor of a food establishment to court.

Milk—A Common Food

Milk is one of the most common foods on the market. For many years, the Division of Health has been testing milk and milk products for bacteria, quality and other food constituents—such as butterfat, and solid-not-fat contents in milk. These tests indicate the safety and nutritional value of milk. The specific gravity test shows if water has been added.

Sanitarians regularly collect for analyzing samples of raw milk and processed dairy products from throughout the milk producing system—from the farm, milk plant and dairy store or milk counter

Milk inspectors check a milk processing plant during a weekly visit. This is just one aspect of the Division of Health's milk sanitation program.



where the consumer buys the product. Generally monthly visits are made to each dairy farm. Extra visits are made if conditions indicate that additional inspections are necessary. Milk processing plants are visited approximately once a week. Specialists from the state level evaluate the adequacy of local milk sanitation control programs.

Because milk is easy to handle and is used on a world-wide basis as food, it is one food used to determine the presence of radioactive materials in the environment. The Division of Health operates a radiological laboratory in Orlando which ran tests on 2200 samples of milk during 1968. The milk samples were collected monthly from milk processing plants in six areas of the state. The milk tested was a composite milk and is typical of what the Price family consumes.

The milk samples are tested for three nuclides—Strontium 90, Cesium 137 and Iodine 131. The first two have a long half-life. This means that a number of years must pass before the elements decay. These nuclides are important because Strontium 90 is absorbed by the bones in the body, similar to calcium in milk; Cesium 137 is absorbed by muscle tissues; and Iodine 131 is absorbed by the thyroid. These nuclides are used as indicators of fallout from weapon tests but since the test ban was imposed by the United States and Russia, the level of radioactive material in the atmosphere is falling.

The radiological laboratory also tests samples of water—supplies for airplanes, trains and ships, and from municipal water systems for radionuclides. An air sampling network around the state is also utilized to check the level of radioactive material in the environment. Dust from the air and rainfall are also collected and tested for radionuclides.

The Division of Health's testing system is so sensitive that one nuclear test by Communist China, or an unintentional leak from underground testing by any country is noted by a rise in radionuclides in the atmosphere. Up to the present time, there has been no danger to the Price family, Floridians or their visitors from radioactivity.



A county health department sanitarian observes the operation of an oyster shucking house. Under the Division of Health's shellfish and crustacea control program, he may also pick up a sample of a product which is tested in a Division of Health or county health department laboratory (opposite page).

Shellfish—Protected from Pollution

Oysters—one form of shellfish—are considered unequaled as appetizers by many people. Since oysters are abundant in many Florida waters, the Price family enjoys them in many ways. Other shellfish, such as shrimp, crabs and lobsters, are equally as palatable.

The danger from oysters develops from the pollution the shellfish may absorb while feeding. An oyster can draw 100 gallons of water a day through its gills. As the water passes through, microscopic plant life and small particles—including pollution and bacteria—are trapped and concentrated in the oyster. When eaten raw, the oyster passes these bacteria on to the consumer. If the bacteria is a disease-producing type, the person may become ill.

The Division of Health has the responsibility of approving oyster-growing waters and inspecting and controlling the operations of shell stock shippers, shucker-packers, repackers and reshippers. Since shellfish are extremely perishable, sanitarians from the county health departments have the responsibility of checking the retail stores to make sure the shellfish are properly refrigerated and from a certified source.

The U. S. Public Health Service reviews the shellfish sanitation program of Florida and other oyster-producing states, and distributes lists of names of all shellfish dealers, shuckers, packers, repackers and shippers who are certified by the states. No Florida shellfish establishment is certified unless it meets the standards set by the Division of Health and the U. S. Public Health Service.

Sanitarians from county health departments made over 1100 visits to 175 shellfish and crustacea processing and packing plants during 1968. In addition, personnel from the Marine Laboratory in Northwest Florida made more than 800 visits to plants in the Apalachicola area where most of Florida's shellfish are harvested. When a laboratory analysis of routinely submitted samples indicates an unsatisfactory condition, the sanitarian investigates and, if necessary, a general cleanup of the plant is made. If a high bacteria count is found in subsequent laboratory tests, the plant may be closed down until the operations can be reviewed. Should oysters from a shucking house be suspected of being contaminated, they may be condemned and destroyed.



Cosmetics and Drugs

Cosmetics and drugs are important consumer products that are regulated by the Division of Health or by the Federal Food and Drug Administration. It is the duty of the Division of Health to see that drugs are safe and cosmetics manufactured in the state are what they are claimed to be. When these products are shipped through interstate commerce, the Federal Food and Drug Administration has jurisdiction.

The main ingredients of skin creams are usually mineral oil,



A drug inspector checks the dates of drugs and antibiotics on the shelf of a pharmacy. The Division of Health is responsible for seeing that drugs and cosmetics manufactured in Florida are safe for consumers.

lanolin, beeswax and similar inexpensive materials. In recent years, cosmetic manufacturers have brought out "wrinkle removing" creams at high prices. These sometimes contain ox-blood, turtle oil, hormones, vitamins, royal jelly or antibiotics which have no lasting results for removing wrinkles. Unscrupulous promoters have in the past added kerosene to face cream as a "special ingredient."

State drug inspectors visit pharmacies regularly and when necessary ask druggists to remove outdated drugs or antibiotics from the shelves. Many drugs, antibiotics and vitamins deteriorate over a period of time and manufacturers date these preparations so they will not be

sold to the public when they are no longer effective. Representatives of some drug companies alert or contact pharmacists to make sure outdated preparations are removed from drugstores and hospital pharmacies.

Inspectors from the Division of Health watch for false claims and mislabeling of drugs and cosmetics. Any part of the literature accompanying the product or used in the advertising is considered by governmental agencies as part of the label. The Division of Health is also interested in any drugs or cosmetics which are adulterated or misbranded. Where the chemical make-up or manufacturing process of a drug or cosmetic is in

question, a state inspector checks the sanitary condition of the manufacturing plant and preparation of the product. If there is any question about the drug or cosmetic effects, the product is ordered off the market until the situation is corrected, or if necessary, the drug is discontinued.

According to both state and federal laws, all drugs and cos-

metics must be registered. An application for each new drug must be approved by the Federal Food and Drug Administration or Division of Health before it is put on the market. Some brands of drugs have been ordered removed from the market by state and federal agencies because claims of effectiveness made by the manufacturers could not be substantiated.

Pest Control Operations

For over 20 years, the Division of Health has carried out its responsibilities to the public and the commercial pest control industry

- * by licensing pest control operators;
- * by carrying on a service of identifying insects for Floridians; and
- * by investigating complaints of homeowners regarding persons or companies engaged in pest control activities. Investigations during 1968 showed that 45 pest control operators were working while unlicensed, and 14 warrants for arrests were filed with the courts.

The Division of Health is also responsible for examining individuals who apply for licenses to make sure they are qualified as pest control operators. Areas of the work included in the examinations are general household pest and rodent control, termite and wood-infesting insects, fumigation, and lawn and ornamental pest control.

If a homeowner has a complaint about a pest control company, he should write the Division of Health or contact one of the regional entomologists in Miami, Winter Haven, Tampa, Panama City or

Jacksonville. The most common complaints have to do with failure of a company to control the wood-infesting pests, failure to comply with a contract, or failure to reinspect the premises.

Hazardous Products

Year after year hazardous products continue to reach the market place in large quantities. Toys with sharp edges, travel irons without fire-preventing thermostats, garden sprays that could explode, food waste disposers which spew out objects at high speeds are examples of products that have put the consumer's life in jeopardy.

Over 90,000 persons are reported annually in the nation as swallowing hazardous household substances and some 300,000 persons are treated for burns from other hazardous products. This would indicate that each year 2700 accidental poisonings and burns occur in Florida. The Division of Health is currently working with hospitals, physicians and federal officials on this problem.

When reports on hazardous products are received by the Division of Health from other state health departments or federal sources, county health departments are notified immediately and these products are removed from circulation. In recent months, such products as dangerous toys, novelty items, cooking utensils, and dishware have been removed from the Florida market.

The Division of Health conducts a continuing program devoted to protecting the Price family from the immediate and long-term harmful effects of ionizing radiation exposure. This involves licensing of radioactive materials, registering of radiation producing machines, inspecting of facilities where these machines are located, and conducting a surveillance of the environment.

A number of electronic products have been introduced to the American people in recent years that possibly could emit radiation harmful to humans. Over 400 devices, such as microwave ovens,



A public health physicist checks to see if a color television set is emitting radiation. This is another program of the Division of Health to protect the consumer.

radar, diathermy, particle accelerators and color television receivers were surveyed in 1968. The results of this survey indicate a need for regulatory authority over laser (light wave), microwave (sound wave), and other nonionizing radiations.

Much too frequently, poisonings or other adverse reactions to hazardous products come to the attention of the Division of Health after a product has been on the market and in use by wide segments of the population.

The Surrounding Environment

The Price family is wrapped in an environment in which it lives, breathes, swims, walks, and travels. This environment of air, water and land supports and affects everyone around. Man is the principal contributor to the pollution of this surrounding environment. His use of the automobile contributes a large part to air pollution. Man and his neighbors, through the keeping of livestock, building and operating of industry, and improper disposal of human waste, contribute to water pollution. Federal and state governmental agencies, as well as private organizations and industry, are working to solve the problem of pollution of air and water.

The Division of Health has continuous programs which supervise the construction and operation of water and sewerage systems. These assure the Price family of good water and proper disposal of human waste.

The disposal of solid waste is one of the major concerns of the Division of Health. This type of waste is one that is destroying the environment of the Price family.



The sanitary engineers of the Division of Health check the engineering plans for water and sewage systems to make certain that the plans meet the standards set by the industry and the health agency. Operators of water and sewage treatment plants attend short courses to improve their techniques and procedures and thus improve the services to cities, water districts and users of private utilities. The operators are certified under a voluntary certification program developed and agreed upon by the Division of Health and the Water and Pollution Control Operators Association.

Under the programs to provide Floridians with good water and proper sewage disposal, county health department personnel made some 46,000 field visits to private water and sewerage systems during 1968.

County health department sanitarians also inspected water plants that have been approved by the Division of Health to make sure the water supply is continuously protected. They also took water samples and checked on the sanitizing and labeling of bottled water. They inspected and checked the operation of public swimming pools after the engineering plans were approved by the health agency. Natural bathing places are also inspected and approved. In some counties, sanitarians advise private homeowners where to locate their wells, pick up water samples for analyzing, and, if necessary, make suggestions as to how to chlorinate the water supply.

The Division of Health has carried on a long-term community pesticide study in Dade County to find the effects of pesticides on human health. Pesticides are widely used for pest control in agriculture and around residences. The research team made a study of acute pesticide poisoning cases to determine short-term exposure effects. Through these studies, the public has been made aware of the dangers which are a natural part of the handling and use of toxic materials.

Under a program to prevent poisonings and accidents, the Division of Health works with 33 participating hospitals, the Flor-

ida Pediatric Society, and the Florida Chapter of the American Society of Pediatrics to maintain poison control centers in all parts of the state. These centers keep files which contain the trade names of products involved in poisonings, their chemical ingredients and antidotes or treatment for the poisons. Over 6450 cases of poisonings were reported to these centers in 1968. County health department personnel made 4054 follow-up visits to individuals who had been seen in poison control centers.

The Immediate Environment

Consumer protection is usually considered as having to do with products or services. But the health and well-being of the Price family depends a great deal upon the conditions of its home, place of employment, schools, and where the members go for recreation or business. The health of the Price family is affected by the frequency and method of garbage pick-up and disposal, the material in its bedding, and sanitary facilities in public buildings, hospitals and nursing homes and recreational camps. The Division of Health is charged by law to protect this type of environment.

Bedding Law—Mrs Price wants to know what she is buying when she purchases a pillow. In order for her to know, the Florida Legislature has passed the bedding law that requires a **LAW LABEL** be fastened to every piece of bedding—pillow, cushion, mattress pad, infant pad, box springs, mattress, upholstered spring bed, sofa bed, studio couch, chaise lounge and any item used for

Law Labels

The three types of Law Labels indicate the material in the hidden portions of the product:

- * A white label indicates all new material.
- * A yellow label indicates that the material has been previously used or the contents are unknown.
- * A green label indicates that the article of bedding has been renovated or processed for the owner only and is not for sale.



Products and services make up one of the environments that are of concern to the Division of Health. Public health inspectors check the hidden materials that go into an upholstered sofa bed.

sleeping that is sold in Florida. This label should be on the items which you cannot open and examine yourself and which contains concealed material. It should correctly identify the concealed material and certify that it is clean. No article which has been used by an individual with a contagious disease can be sold.

The Division of Health is legally responsible for enforcing the bedding laws, and it maintains inspectors who are based strategically throughout the state. These inspectors check retail stores, renovators of bedding, distributors and manufacturers for proper labeling of bedding. Most of the time the products are properly labeled but on occasion, inspectors have found bits of paper, rags, straw, trash, floor sweepings, nails, tacks and pieces of wire in the bedding material. A laboratory is maintained at Orlando to test for concealed material, for composition of the material, amount of bacteria, and whether the material is new or used.

Solid Waste Disposal—The Division of Health has an interest in solid waste disposal—a problem that is directly related to the health of the Price family. The disposal of solid waste is a growing problem in Florida. At the present time, each Floridian is producing 4.5 pounds of solid waste daily; public health authorities say this amount will double in the next ten years.

Garbage disposal in sanitary landfills and by incinerators is of primary importance in Florida because of the dangers of rodents and insects. Flies and mosquitoes, as well as other insects, breed in liquid and decaying garbage—which also serve as food for mice and rats.

In some counties, high water levels make the sanitary landfill an unsatisfactory means of disposing of solid waste. Improperly operated landfills, where solid waste material is burned or left uncovered are health hazards.

When properly operated, an incinerator can achieve a major reduction in the volume of refuse, but the disposal of ashes, partially-burned garbage, and non-combustible materials can prove to be a nuisance.

Inspection of Schools, Hospitals, Nursing Homes—In order to protect the aged, sick and children, the Division of Health has been charged with the inspection of schools, child care centers, hospitals and nursing homes. Sanitarians from the county health departments check the lighting, safety measures—(such as the location of fire extinguishers), food service, housekeeping, waste disposal and water supply. The public health nurses inspect nursing homes for such things as nursing care and techniques, storing of drugs and narcotics, following of physician's orders, planning of inservice programs and supervising of staff personnel. The Division of Health makes annual inspections of nursing homes, hospitals and clinical laboratories prior to certification for Medicare.

Public Buildings and Recreational and Migrant Camps—Sanitary facilities in migrant and tourist camps, trailer parks and public buildings and places of employment are the concern of the Division of Health. Sanitarians regularly check these facilities to assure that they are properly constructed, privacy is assured and the fixtures and plumbing are adequate for the people using the buildings or camps. Camps and trailers are inspected for waste disposal, water supply and other factors before they are granted permits to operate by the Division of Health.

The Consumer and the Division of Health

Although the health of the consumer has been given some protection for a number of years, more attention is now being given to the consumer's pocketbook in mid-20th Century.

In the 1890's the old State Board of Health and the courts took the position that a smallpox vaccination should be compulsory for the benefit of the whole community. But there are still few laws to protect the innocent consumer from "ballooned" bread, added ingredients in food, and "watered" meats.

During the Middle Ages, when goods were displayed on the open market and could be examined thoroughly for defects, the doctrine of "caveat emptor" or "buy at your own risk" originated. Today, this philosophy still prevails to a great extent. Only in recent years, when the United States is at the pinnacle of consumer prosperity, has there been an interest in protecting the consumer.

Early laws protected the seller. Only now have technological advances made it necessary to protect the consumer from false claims, misleading advertising, and dangerous products. From the loan company to the supermarket, the average Florida family is the innocent victim of exploiters. Not all businesses are exploiters but consumer, or personal, bankruptcies have increased 240 per cent on the national level in the past 10 years.

The Division of Health is a "people-oriented" state agency that works closely with federal agencies, such as the U.S. Public Health Service and its Consumer Protection and Environmental Health Service, as well as other state agencies.

The Florida Medical Association has recommended that all functions relating to the health protection of Florida residents and visitors be grouped under a single health agency. It specially included all public health sanitary inspections.

A legislative study committee has indicated that sanitary inspection by a non-health agency duplicates the efforts of the Division of Health and that non-health agencies should withdraw from the field. The same committee also stated that dairy inspections should be handled exclusively by the Division of Health.

The Division of Health, which includes the county health departments, has the staff and organization to continue the consumer protection related to human health and well-being. This has been the work of the Division of Health since 1889.

The county health department sanitarians answer thousands of nuisance complaints each year. Many of the complaints have to do with dogs and these are answered promptly because of the fear that rabies may be involved.



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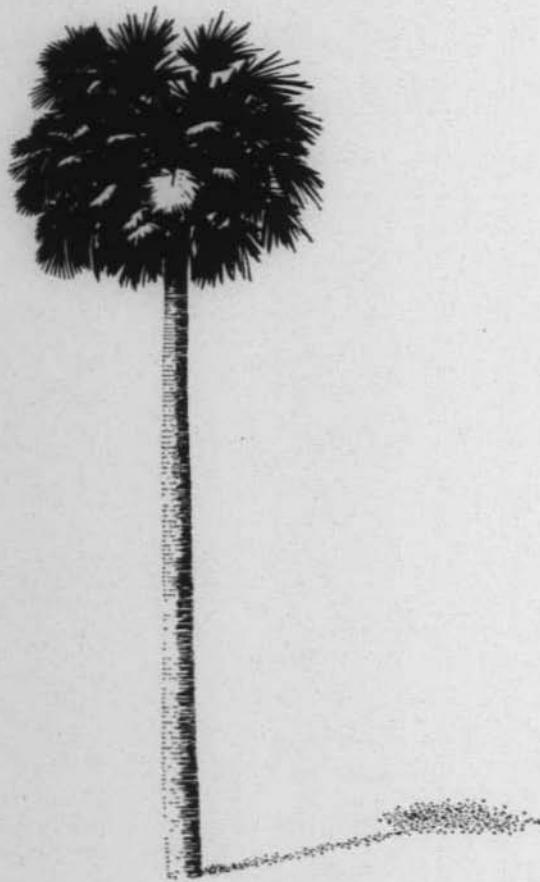
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FLORIDA HEALTH NOTES



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**The NEW LOOK in
Florida's Public Health**

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(Cover photo) **Florida Health Notes** takes a realistic "look" at public health in the Sunshine State.



Florida's public health has kept pace with changing times. Today's practices in public health are as different from those of 1889 as are the young women of the 1970's from the once fashionable Gibson girl.

The NEW LOOK in Florida's Public Health

Young people talk about everyone doing "his thing." This, perhaps, can be interpreted as doing what you want to do . . . what you like to do . . . or . . . doing your job.

Public health professional workers of Florida are "doing their thing."

- * A physician advises the county health department about an outbreak of an infectious disease.
- * A public health nurse checks on the condition of an elderly, diabetic patient in his home.
- * A registered sanitarian surveys a restaurant.
- * A nutritionist encourages an expectant mother to keep to a proper diet so that she may have a healthy baby.
- * A Division of Health team inspects a nursing home prior to certification as a provider of services for Medicare.
- * A sanitary engineer reviews plans for a sewage treatment plant that will upgrade the sewerage system of a Florida city.

The "things" public health workers do and the technology behind their programs are continually changing. The ideas of health and what causes disease have changed tremendously since the State Board of Health was founded in 1889. Scientific knowledge and technology between 1900 and 1950 grew more than during all of man's previous, recorded history. In the past two decades, this technology has doubled again.

This issue of **Florida Health Notes** compares the ideas of the 1890's about health with what the Division of Health is doing at the beginning of the 1970's. This is our "New Look" in Florida's public health and a review of what the Division of Health is doing to provide a healthy way of life for the citizens of Florida and the millions of tourists.

Public Health in 1889

When the State Board of Health was established by a special session of the Florida Legislature in 1889, the City of Jacksonville had just gone through a yellow fever epidemic that interrupted the normal life of the city and its economic growth. Over 10,000 of the city's 26,800 residents fled; there were over 5000 reported cases of yellow fever.

Yellow fever was thought to be spread by "fomites"—disease-producing agents that were spread in mail, baggage, clothing, utensils and such articles. Shipments of goods were fumigated and delayed. Cannons boomed along Bay Street in an effort to prevent the disease. Little did people know that yellow fever was spread by an insignificant mosquito but they did the best they could with the knowledge they had.

People laughed at the idea that disease could be caused by "bacteria." "Nothing you couldn't see or was that small could make you sick," they said. Epidemics were considered a "visitation from Providence." People tolerated dangerous nuisances, such as cesspools, unsanitary cellars containing decaying vegetables and fruits, stables near the houses, and they paid the penalty with typhoid fever, diphtheria and filth diseases.

The State Board of Health was the latest concept in public health at the time. But public health knowledge was limited. Scientific research was in its infancy. Health authorities were concerned with cesspools under bedroom windows, pigsties too close to houses, filthy stables, and disease-carrying dust. **Florida Health Notes** in the 1890's carried articles condemning ground-dragging skirts as disease carriers, and fashionable, too-snug corsets as harmful to the women of the day.

Communicable diseases were the prime concern of health workers. Yellow fever, smallpox and cholera—now no longer seen in the

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state—were chief killers. Opposition to public health measures of screening houses, destruction of adult mosquitoes and prevention of mosquito breeding was overcome and the state finally eradicated yellow fever. The vaccination against smallpox also met opposition from some people but this was overcome. Cholera yielded to more careful and sanitary disposal of human waste.

As Florida grew and developed the State Board of Health expanded and grew along with it. For 80 years the State Board of Health faithfully served the citizens and visitors of Florida. Regional offices were set up but in the 1930's and 1940's these gave way to county health departments which are the foundation of the present public health partnership in Florida.

Its programs have made life pleasant in Florida. Its mosquito control programs opened vast areas of the state to residents and tourists by driving out the disease-carrying insects. A direct relationship can be shown between the control of the salt marsh mosquito and the growth of the tourist industry.

Some communicable diseases—such as measles, mumps, whooping cough and tetanus have been reduced to low levels by vaccine. But starting during the 1940's chronic diseases of the elderly—heart disease, cancer and stroke have become major killers. These diseases and the increased concern of public health officials about the environment have changed the nature of Florida's health programs. Such programs as maternal and child care were started some 50 years ago, but they continue today with new emphasis on the control of mental retardation, infant deaths and the prevention of crippled children.

A New Agency

The Florida Constitution of 1885 broadened the people's share in their government by making cabinet posts and judges' seats on the Supreme Court elective. This Constitution created the State Board of Health and put the county boards of health under its jurisdiction.

The Constitution of 1968, a three-part amendment of the 1885 Constitution, is a revision of the older instrument and not an entirely new document. Adopted by the voters of the state in Novem-

ber 1968, this Constitution gives Florida an annual legislature and a more tightly organized executive department. The new document stated that the executive branch could not have more than 25 departments. In line with this action, the 1969 Legislature passed the Reorganization Act that tied some 200 scattered agencies into 23 departments.

The State Board of Health, the agency which served Floridians for 80 years, became the Division of Health in the Department of Health and Rehabilitative Services on July 1, 1969. All statutory powers of the State Board of Health and all of its duties, functions, records, personnel and property and appropriations and allocations of funds were transferred to the Department. Other agencies now under the Department are:

The Division of Adult Correction (which handles the prison system);
the Division of Mental Health;
the Division of Mental Retardation;
the Division of Vocational Rehabilitation;
the Division of Youth Services; and
the Division of Family Services (the former State Department of Public Welfare).

The Department also includes the Crippled Children's Commission (a bureau not under any special division); the Council for the Blind (under the Division of Vocational Rehabilitation); and Alcoholic Rehabilitation (under the Division of Mental Health). A Division of Administrative Services was also created—this includes the administration of state hospitals and institutions, and comprehensive health planning.

The five-man Board of Health, which was a policy-making body for the State Board of Health agency, became an advisory council to the Secretary of the Department of Health and Rehabilitative Services.

A few of the duties of the State Board of Health, such as air and water pollution control, were transferred to other state agencies, but, in turn, the State Tuberculosis Control Board (which administered the tuberculosis hospitals) was abolished and its functions in management of the hospitals was assigned to the Division of Health. The functions of the Pest Control Commission were also moved to the same agency.



HEALING HANDS—A public health nurse helps a stroke patient with rehabilitation. Home nursing care is becoming an increasingly important part of public health nursing service.

The Guardian of the People's Health

While the functions and statutory powers of the State Board of Health were transferred to the Department of Health and Rehabilitative Services, the Division of Health is still responsible for the administering of the public health programs in Florida. The county health departments are still the first line of defense against disease and staffs of these agencies carry on the health programs and environmental services.

Because public health is in a continuing state of change, the various functions of the Division of Health are constantly being re-evaluated and brought up-to-date in order to bring better health to the people of Florida and their visitors.

A New Look in Nursing Services

Public health nurses in Florida are taking a long, hard look at the health services delivered by their profession. There are many activities which have been carried on by public health nurses that now could be done by licensed practical nurses, home health aides,

or clerks. Due to increased demand for nursing care of the sick at home, more planning time and judgment is demanded of the professional nurse. She has less time for unskilled nursing services, such as patients' baths and personal care. Public health nurses are needed where professional judgments are made and where her skills are required. The type of nursing care given depends, of course, on the acute or chronic condition of the patients.

Due to the demand for beds, hospitals are no longer keeping patients after they have passed the critical stage. They may go to a skilled nursing home (extended care facility) for a time, or they may go home. The number of sick patients who are visited in their homes by public health nurses is increasing; many of these patients are chronically ill but often need nursing supervision and care to prevent a regression of their condition.

For many years the nurses have given traditional public health nursing services in Florida. These include maternity care, school health services, immunizations, follow-up care of the mentally ill, tuberculosis patients and the many with chronic diseases.

Because of the types of illnesses they now see during home visits, public health nurses need to keep current with the various kinds of treatment and medications, techniques and equipment once found only in hospitals.

Currently there are some 40 patients in Florida homes who are living on kidney dialysis machines. While the patients and their families have been taught how to operate these machines, public health nurses are needed to give general care and supervision to the patient, such as diet, exercise and rest. Emotional support to both patient and family is most important in these homes.

Patients with emphysema are living at home with breathing apparatuses. The public health nurse must keep current in the nursing techniques and respiration exercises required for this type of patient. A tremendous responsibility rests with the families who care for these patients. With the advice of the attending physician, public health nurses supervise the management of these individuals, teach the families how to give care and moral support to the patients, and see that they have the proper diet. Education and continuous encouragement to the families are important aspects of the nurse's role in working with these patients and families.

Because of the additional home nursing care and shortage of nurses, the traditional public health nursing programs may suffer. If a nurse is planning the next morning to visit a tuberculosis patient at 8:30, a maternity patient at 9, and a school at 10 o'clock, when she arrives at her office, she may find a request from a physician to visit Mrs. Brown (who is having trouble with her catheter), or a heart patient who needs medicine twice a week (and the physician wants a progress report). Because the heart patient and Mrs. Brown are in serious need of nursing care, they will get priority attention and the other visits are rescheduled.

To relieve the public health nurse in some aspects of nursing care, there is a trend in Florida to use home health aides. These individuals have some training in simple personal care of patients—helping with baths, changing linens, fixing meals, helping the patient in and out of bed. She cannot give skilled nursing care—such as change sterile dressings, give treatment, or medications by injections. The home health aide works under close supervision of the public health nurse.

Because of the advances in nursing and medicine, the Division of Health and county health departments have a continuing educational program for public health nurses. In addition, the Division of Health recruits nurses from college, university, hospital and junior college nursing schools. Nurses from the larger counties who have not received preparation in public health (mainly those with diploma or associate degrees) go through an orientation course in the county where they work. If the nurse is employed by a small county health department, she will take her orientation at one of the four larger county health units designated as Field Teaching Centers.

The Fight Against Hunger

The Division of Health was first concerned about nutrition in 1909 when Dr. Joseph Y. Porter, the first state health officer, linked nutrition with pellagra, a chronic condition caused by a deficiency of certain vitamins and characterized by such symptoms as skin eruptions and gastro-intestinal disturbance. The first nutritionist was employed by the health agency in 1942. There are now 29 on state and county projects and programs.

The nutritionists work through clinics and with public health physicians and nurses to counsel patients who are victims of chronic disease, expectant mothers, and families who have dietary needs related to health problems.

There is more interest in getting nutritional information to teenage girls and mothers through family planning projects. Nutritionists advise these groups on how to obtain and use commodity foods, or how to purchase more nutritious foods on low incomes or with food stamps.

One factor that can help break the poverty cycle is proper nutrition. A person cannot do his best at any stage of life without proper assimilation of food. If he is hungry, he may not have the energy to concentrate in school or produce a worthwhile day's work.

Many mothers are not well nourished when they become pregnant. Teenage girls, even among the higher socioeconomic levels, are one of the poorest nutritional groups in Florida. This has a direct effect on their ability to bear children—even in the future. Studies are in progress that indicate that a diet lacking in proteins and calories may delay the development of the brain cells in an infant. This may be a factor in some cases of mental retardation. A proper diet is important for the mother because a baby's brain

BETTER DIETS—A Division of Health nutritionist counsels a group of mothers in a public health clinic on how to buy and prepare nutritious foods.



starts to develop about three months after conception. The growth continues until the child is about three years old.

The Division of Health is finding that the people of Florida today are more interested in nutrition than at any previous time. They are asking more questions and seeking more help. More nutritionists are needed in county health departments to give advice to people receiving commodity foods and food stamps distributed by the Division of Family Services.

A few of the county health departments have nutritionists on their staffs. These are Dade, Palm Beach, Hillsborough and Brevard. Broward and Orange County Health Departments have nutritionists on Maternal and Infant Care Projects; Duval, Sarasota, Volusia and Escambia County Health Departments are using assigned state nutritionists with the aim of developing their own programs. But there is a need for counties with large populations to have at least one nutritionist for every 100,000 persons. In those counties with concentrations of elderly people, there should be one nutritionist for every 50,000 persons; where there are people of the low socioeconomic level with health problems, one nutritionist for every 10,000 persons is advisable.

Nutritionists are needed to train home health aides and serve as consultants to hospitals and nursing homes which provide Medicare and Medicaid services. According to the regulations of these federal programs, hospitals and extended care facilities need consulting dieticians on their staff in order to be certified for the programs.

A Concern for Environmental Health

Two important factors will continue to affect the environmental health programs of Florida for many years. These factors will have a direct relationship to state programs and how they develop.

The first is the growing population which tends to lead toward increasing urbanization and densely populated areas of the state. The second factor is the concern that more people are expressing about the environmental problems of congestion, noise, water and air pollution and solid waste. When they complain about pollution, they tend to tie consumer protection, air and water pollution, storm drainage, solid waste, and the keeping of dogs into one program.

Since 1950, Florida has changed from a rural to an urban state with a population increase each year equal to a new city of 200,000 persons. This amounts to a city about the size of St. Petersburg being set down in the middle of the state annually. The addition of all these people means that houses, utilities, schools and highways have to be added; recreational facilities, water supplies, liquid and solid waste collection and treatment systems must be built.

New highways built to outlying areas give access to new lands for housing developments and industry. Sewerage systems need to be built to serve these developments. Water supplies need to be improved. Techniques have been refined to examine water; and water once considered as being good—but a little off color—is no longer acceptable. The public is willing to pay for quality water and is demanding it.

Although the Division of Health is no longer in the business of air and water pollution control, such programs are relevant to environmental health. Concentrations of pollution in the air once would blow away. Now they are trapped by new, tall buildings. Where once a family had one car, it now has one for each adult member of the family and these are major polluters of the air.

Federal programs are now required by the National Environmental Policy Act of 1969 to consider their impact on the environment before they are presented to Congress. The same type of programs need to be sponsored on the state level.

While there is a demand for a stepped-up campaign against pollution of the environment, at the same time there are not enough trained people to fully implement environmental control programs. No single profession is involved but environmental control cuts across the board, affecting many occupations and professions. Laboratory technicians, engineers, contractors, chemists and many specialists are needed. Even meteorologists and computer operators are used. Trained people in many fields, combined with expenditures of money, are needed to control the environment before the environment overcomes us.

Continuing Education for the Sanitarian

Once the sanitarian was just an ordinary guy who was interested in public health and was willing to inspect privies, make housing surveys and check out nuisance complaints. But those days have long departed.



MAJOR PROBLEM—The proper disposal of solid waste is one of the environmental health problems facing the Division of Health. This open dump is located across the street from a group of Florida homes.

The sanitarian of Florida now is required to have a college degree, preferably a bachelor of science degree with an emphasis on one of the sciences. Some of the sanitarians are men with specific scientific education. This means that the people of Florida in 1970 are receiving better environmental health services. The sanitarians are men who are knowledgeable and who have developed professional standards and competencies.

Even though the sanitarian has a college degree when he begins working in public health in Florida, he goes through a 12-week orientation course. This gives him a comprehensive bird's-eye view of the state's sanitation programs.

In addition, the Division of Health offers topical courses for sanitarians as a part of their continuing education. Topics for courses, which average two days in length, include

- * food protection program management;
- * communications for the sanitarian;
- * urban planning for environmental health;
- * sewage and industrial waste;
- * local health programs; and
- * food service, swimming pool, food processing, common carrier and shellfish sanitation.



FOR BETTER SERVICE—County health department sanitarians are encouraged to continue their education through home-study courses. The Division of Health has post-graduate training for qualified career personnel.

Home study courses in insect and vector control, basic mathematics, and control of water-borne, communicable, and food-borne diseases are available to the sanitarians from the training branch of the U. S. Public Health Service. These courses are given through the Division of Health's Sanitation Section.

The Division of Health also concentrates on the training of special sanitarians who serve as food handler supervisors, and who work with the training of food handlers. There has been a program underway to upgrade the food workers who deal directly with the public. Over the years food coordinators' training courses have been standardized. This has resulted in a high rating given by federal agencies to Florida's food programs. Selected personnel from the county health departments and state sanitation consultants have received post graduate training and this has helped upgrade the whole environmental health program.

The emphasis during the inspection of food processing plants, food service establishments, grocery stores and meat markets has been on the food handling practices rather than on the food source, storage, buildings and equipment. A major danger

from food-borne illnesses lies in the food handling practices rather than in the other aspects of the food industry.

Up-Grading the Nursing Homes

Nursing homes in Florida are here to stay. Once families were responsible for elderly members in their midst but smaller houses, population mobility, and other factors have made nursing homes a necessity. They evolved from boarding houses, old soldiers' homes, county poor houses, and homes for the aged. They developed with Social Security payments and now the federal programs of Medicare and Medicaid have accelerated their growth.

In order to qualify as a provider of services, nursing homes have had to meet certain standards set by state and federal programs and these have greatly influenced the Florida nursing home laws.

The first nursing home law was passed in Florida in 1953. Since then standards have been upgraded to protect and improve the care of the nursing home patient. The most recent law passed by the 1969 State Legislature was an attempt to improve licensure but the statute notes that every existing nursing home will have to meet only the minimum standards in force at the time of original licensure.

The Division of Health is exerting a strong effort to have the restrictive language in this recently-passed nursing home law removed in order to provide uniform up-grading of the older sub-standard homes.

Increased national attention by the medical profession, the nursing home industry, private organizations and government have shown that nursing homes need qualified services and facilities. Until a recent state survey was made, nursing homes were inspected by sanitarians and public health nurses from the county health departments. Now state inspectors are making a survey of every nursing home in the state.

Under the Medicare program, the Division of Health inspects the nursing homes and recommends to the Social Security Administration those eligible for certification. Under Title XIX (Medicaid),

the Division of Health recommends to the Division of Family Services those nursing homes which are eligible for certification and classification.

The nursing homes are classified according to size, character, and type of service:

* The comprehensive nursing care home will provide extended nursing service 24 hours a day with a registered nurse on duty eight hours per day—seven days a week and either licensed practical nurses or registered nurses on duty all of the time.

* Nursing care home will give limited nursing services with a registered nurse on duty 40 hours a week and licensed practical nurses (or registered nurse) on duty around the clock. This type of nursing home is equal to the intermediate care facility which participates in a federally-sponsored state program.

These guidelines were set up according to those planned by federal agencies. One condition for licensure is that the nursing homes meet the standards for safety set down by the Fire Marshall's Code. Under an arrangement with the State Fire Marshall's office, a survey of all nursing homes and facilities in the state will be conducted and recommendations made to the Division of Health as to those homes which should be licensed. In an effort to explain the nursing home laws and make them more effective, the Division of Health sponsors seminars and workshops for administrators and superintendents of nursing homes. Many of these workshops are effective; but the advancement of the nursing home program depends upon the cooperation and agreement between the nursing home industry and the Division of Health.

New Emphasis on Tuberculosis Control

Once medical people thought that patients with tuberculosis could not get well in Florida. Recommendations were for high altitudes and either cold or dry climates. The death rate for consumption, or "phthisis" was twice as high as typhoid fever and around the turn of the century it was the leading killer. In New York City, the death rate was over 400 for each 100,000 persons.

Fresh air was thought to cure tuberculosis and tiny cottages were built in backyards of Florida homes for victims with the dis-

ease. Four tuberculosis hospitals were constructed and a fifth authorized before drugs were developed that made it possible for public health workers to treat people in their own communities.

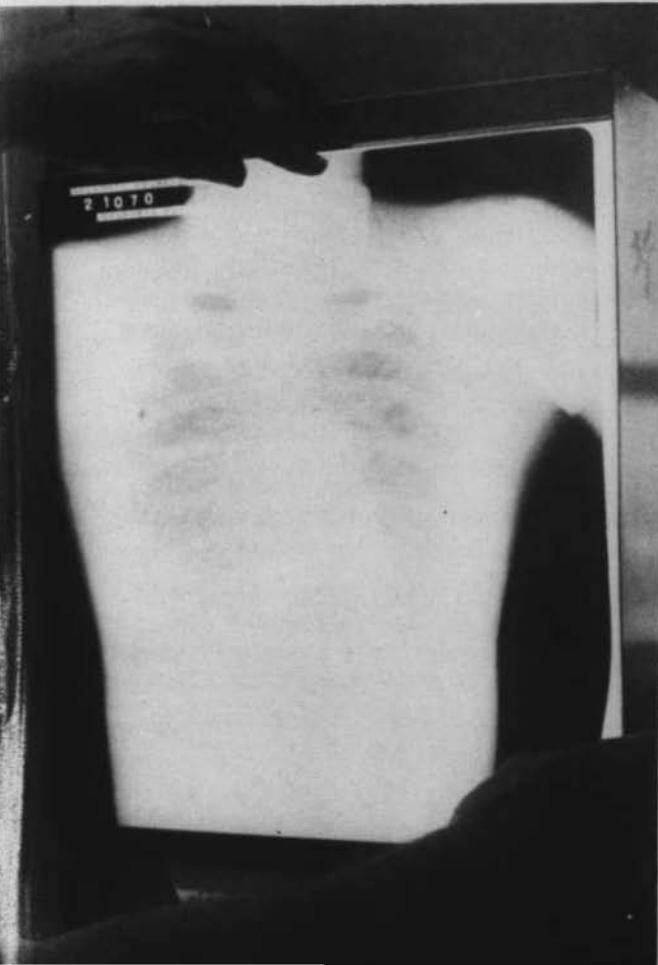
The main objectives of the tuberculosis control program today are:

- * to prevent infections of persons who are not infected;
- * to prevent the disease from developing in those who are infected; and
- * to keep those persons who could spread the disease from remaining infectious.

Two programs in the Division of Health carry out these objectives:

- * the community programs which test individuals in the community, find those who are infected, treat with drugs those who can remain in the community, and hospitalize those who are capable of spreading the disease.

CONTROLLING TUBERCULOSIS—The Division of Health carries on community and hospital programs to prevent, detect and control tuberculosis.



* and the hospital programs (at the remaining tuberculosis hospitals at Tampa and Lantana) which treat only those persons who have severe infections or are indigent and lack private physician care. Because these patients are usually ambulatory, they require little intensive care. The patients stay in the hospital until they have negative sputum cultures; then they are released to their homes and treatment is continued.

Under the community programs, the county health departments and voluntary health organizations carry out various types of screening programs. In one such program, schoolchildren are given skin tests when they enter the first grade. About 40,000 first graders were tested during 1969, and about 0.43 per cent showed a reaction. This compares favorably with 1.7 per cent 10 years ago. A total of 109,000 children was tested during the 1968-69 school year. This was part of the more than 208,000 teachers, school employees and other persons tested by the county health departments.

Since July 1, 1969, the state tuberculosis hospitals have been under the Division of Health. The two hospitals have a bed capacity of 950 patients but usually they have an average of only 650 tuberculosis patients. The 1969 Legislature approved a plan whereby some of the beds in the tuberculosis hospitals could be used for geriatric mental patients.

Tuberculosis is a disease that will remain in Florida for a number of years. The disease develops slowly; the bacilli grows about 60 times slower than some other bacteria, the pneumonia germ, for example; and it is cured very slowly. Persons are treated with drugs for two years or more after sputum cultures become negative. Some people have the disease but never become infectious.

Factors affecting tuberculosis control in Florida are:

- * the elderly people who were infected 30 to 50 years ago and who have not become diseased, but still have the potentiality;
- * the Cuban refugees who account for about 60 cases each year; and
- * the migrants who reside and come in contact with the general population.

Increasing Attention to Chronic Diseases

For some 50 years the emphasis of the State Board of Health was on communicable diseases. It still is but the work of the Division of Health has been broadened to try and find the answers to such problems as the cause and reduction of cancer, heart disease and stroke—the three leading causes of death in Florida. (Infectious and communicable diseases are still fourth in the list of the causes of death.) Chronic diseases really did not become a major factor in public health programs until the 1940's.

Today there is much emphasis on smoking and health. Cigarettes have been indicted as the cause of many chronic diseases, such as coronary heart disease, lung cancer, cancer of the mouth and throat, hypertension, chronic obstruction, bronchitis and emphysema. The Florida Committee on Smoking and Health, of which the Division of Health is a member, sponsors an educational program that informs Floridians on the dangers of cigarette smoking; urges them not to start the smoking habit; and encourages those who do smoke to quit. The Division of Health has been a moving force in this program along with the Florida Medical Association; the Florida Heart Association; the American Cancer Society, Florida Division; the Florida Tuberculosis Association and the State Department of Education.

Several hundred women are alive today because of the Division of Health's cervical cancer program. The major reduction in the cancer of the cervix uteri has been accomplished by the Pap smear (cervical scrap). During 1968, over 40,000 women in 57 counties were given this test. Of this figure, 507 were suspected of having cancer, and 120 were positive for cancer cells. Early detection of their cytology made it possible for these women to be diagnosed and receive early treatment.

The latest emphasis in chronic diseases is the screening program for cardiovascular disease (heart disease). Through hypertension screening programs in a number of counties, potential victims of stroke and other conditions are found. Preliminary studies of high blood pressure in schoolchildren have been conducted in several counties with the cooperation of the county health departments. These studies show that almost two per cent of the children have elevated blood pressures. Frequently one or both par-

ents of these children also have hypertension. It is possible that hypertension may begin in early life and prevention of stroke should begin with a study during childhood, and if necessary, appropriate treatment.

One condition that affects many elderly people is deafness. For this science has developed hearing aids but too frequently they are fitted incorrectly, oversold on the equipment (made to believe that the hearing aid will cure deafness and do marvelous things), or become the victims of fly-by-night dealers. A recent State Legislature gave the Division of Health the responsibility of administering the Florida Statutes which regulate the hearing aid industry in Florida. This was done by requiring fitters and sellers of hearing aids to become proficient in their business, to pass an examination to demonstrate their knowledge of their equipment, and to be licensed.

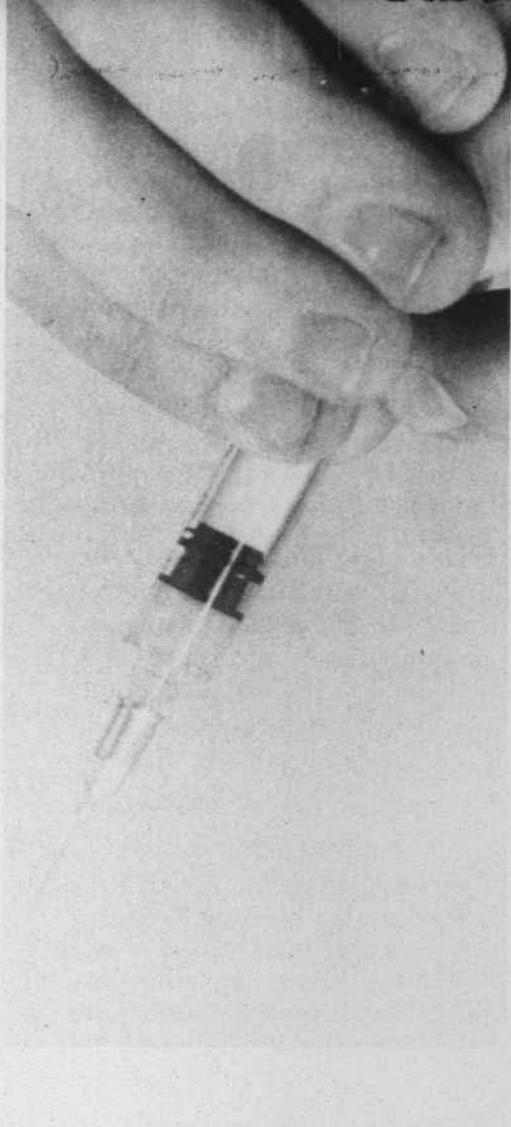
Each person who fits and sells hearing aids in the state has passed the qualifying examination by January 1970 and is now registered and licensed. During the two years since the law went into effect, the Division of Health has answered many complaints. About half of these were from dealers who sought the upgrading of the industry by reporting unethical conduct of other dealers; and the other half was from elderly people—many of whom had been sold inferior products at high prices. The law has eliminated those who sold their products from door-to-door or operated from a truck. The situation has improved for the legitimate dealers of Florida.

People are urged to deal only with those fitters and sellers who are registered with the Division of Health and who have permanent places of business.

Concentrated Efforts Against Communicable Diseases

The Division of Health, while always leading the fight against communicable diseases, will make a concentrated effort during the 1970's to eliminate certain immunifacient diseases (those which can be prevented by immunization). A three-year

campaign is already underway to eradicate rubella (German measles) from the state. This disease frequently causes malformed babies if their mothers contract German measles during the first three months of their pregnancy.



CONCERTED ATTACK—The Division of Health has already launched a campaign to rid the state of those diseases which can be prevented by immunizations.

637 cases of measles; 12 cases of tetanus; 1691 cases of mumps; and 151 cases of whooping cough.

In the best interest of the public and to prevent disease, health officials are making an effort to move all programs relating to health into the state agency which has as its primary concern and responsibility the health of the people. This would include the prevention of disease epidemics relating to food, milk and hazardous substances.

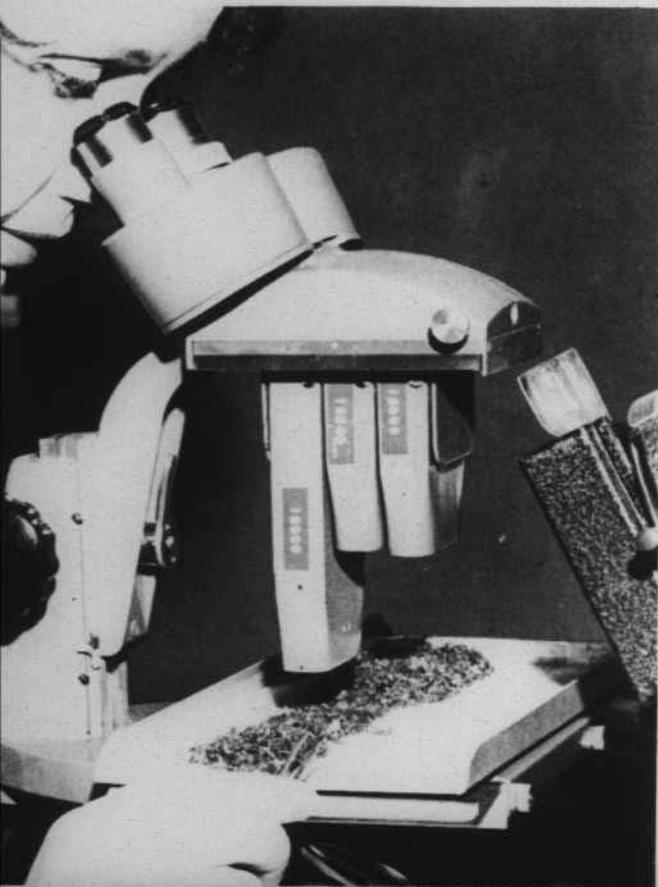
Plans are also being made to increase the immunization programs against tetanus, diphtheria, smallpox, whooping cough, mumps, and rubeola (Red measles). Some of these totally preventable diseases have persistently plagued the state with a few cases each year. For example, there were 20 cases of diphtheria identified in 1969;

Gastro-intestinal diseases are frequently related to eating habits of the public, and in 1969 there were 1678 cases of food-borne diseases reported in Florida. Many of these could have been prevented through proper food management, including the handling of food in the home. Milk is especially involved; this food—when under favorable conditions—provides for the rapid growth of bacteria. It is also the food most consumed by the most susceptible group of the population—the children.

New Research in Mosquitoes and Pesticides

Florida has an internationally-known research laboratory devoted to mosquito control at Vero Beach. Some studies carried on there are unusual. Scientists, under a new study, are attempting to develop through inbreeding a specie of mosquito that would have a reduced rate of survival. When bred with others of its race, the mosquitoes with altered chromosomes could eventually replace the present-day specie. Another study seeks to relate the mosquito flights and behavior to the amount of food the insects consume.

To decrease the amount of time needed to find viruses mosquitoes carry in the environment, the research laboratories of the Division of Health are trying new methods of surveillance. Previously, a pool of 50 mosquitoes of one specie was processed at a time. Now pools of 1000 mosquitoes of all species are tested for viruses and this is expected to locate quicker geographic areas in which a virus is prevalent. When a virus is located, a more detailed study of the area then will be made.



FIGHTING VIRUSES—The Division of Health is changing its methods of testing mosquitoes for arthropod-borne viruses. The aim is to quicker detect those viruses carried by the insects in the environment.

Persons occupationally exposed to pesticides are part of a community pesticide study in Dade County. Physical examinations are made; biochemical and biological tests are performed. Follow-up studies of these persons are extended over a long period of time to find out if chronic diseases develop, or if there is a higher incidence of disease or death. The effects of drugs which stimulate the body to get rid of pesticides in the body fat are also being studied.

One of the pesticides under attack for its persistence in the environment and humans is DDT. The pesticide is not used by the Division of Health nor any of the agencies under its jurisdiction. It is doubtful that it is widely used by commercial pest control operators, but a small amount may be in use for control of mice or some caterpillars on lawns and ornamental shrubs. The main use of DDT at the present time is in agriculture. Use by the homeowner has been outlawed by the Congress and the U. S. Department of Agriculture.

The Division of Health has recommended that the U. S. Departments of Health, Education and Welfare; Agriculture; and Interior be followed in limiting the use of DDT to the prevention or control of human disease and other essential uses for which no alternative is available.

The federal agencies recommend a review of persistent compounds and selected acceptable uses and tolerance limits with sufficient margin of safety to protect human health and welfare. They believe that it would be impractical to attempt to eliminate residuals of such pesticides from foods by applying a zero tolerance limit. Such imposition would threaten the supply of essential foods and welfare of the entire nation.

Updating the County Health Departments

Because of the increased number of programs and anticipated additional indigent medical care foreseen for the county health departments during the 1970's the Division of Health will have to recruit and train more people; obtain more money, and gear the operations to carry out these functions.

There is a move underfoot to furnish the lower socioeconomic groups with general medical care. The Division of Health and the Division of Family Services could work together to finance these clinics through Medicare and Medicaid.

A New Program—Radiological Health

The atomic blasts of World War Two brought a new public health hazard to the people of Florida—and the world: RADIATION. When compared with nursing and sanitation programs, radiological health is a newcomer to public health. The Florida program is about 10 years old. As a basic, state-oriented public health program, radiological health had its early beginning in Florida when a survey was made of X-ray machines used by the practitioners of the healing arts in Southeast Florida.

Today, the Division of Health operates a state-wide surveillance network to detect radioactive material in the environment and certain food products. The state agency also licenses and inspects users of radioactive materials and registers and inspects radiation-producing machines. It also surveys for excessive radiation emissions from such electronic products as color television receivers, microwave ovens and diathermy used by the public.

Special projects include the radiological surveillance of areas surrounding atomic-powered plants now under construction in Florida. When these power stations go into operation, the Division of Health will be able to detect any excessive leakage of radiation.

Financing will be the county health departments' key to the cost of doing business in the 1970's and the pace by which salaries increase—in order to keep qualified personnel. The use of auxiliary personnel, such as home health aides under proper supervision, will increase. And in general the removal of restrictions on the duties of professional persons and the wider use of judgments in carrying out medical orders will have to be implemented for more effective operations of the county health departments.

Planning—A Part of Public Health

Modern technology has brought about complicated reorganization of health programs. A project to improve the health of migrants, for example, draws manpower from public health nursing, nutrition, sanitation, sanitary engineering, accounting, and many

other disciplines. For many years the Division of Health has been operating with plans made up for a specific program but not agency-wide. Federal agencies, such as the Children's Bureau and U. S. Public Health Service, required these plans.

The 1967 State Legislature passed the State Planning Law which set up the Office of Planning. Its function was to produce a state-wide plan that would include all activities of the state agencies. The planning of the Division of Health is now related to the other divisions of the Department of Health and Rehabilitative Services. The work of the Division of Health is affected because programs which were once operated according to an organizational table will now be categorized according to objectives.

A "Planning, Programming, Budgeting System" is also under study which will link the cost of programs, operating plans and the benefits derived from the program. Priorities must be set by each program and this means that the people of Florida will have a better operated state government.

The Present Concern of Public Health

Early public health was chiefly concerned with the state of communicable diseases. In 1898, compulsory vaccination was reported in **Florida Health Notes** as an infringement upon the personal rights of the individual but state health officials took the position that when the individual's relationship to society was such that he became dangerous to the life and health of others, he should be considered a nuisance and legally treated as such.

Developments in sanitary science, in medicine, and in industrial technology usually came first. Then legal means and legislative programs were necessary to put the developments of science and technology at the service of the people. Sometimes legislation was needed to deal with health problems created by technological advances—especially in the area of environmental pollution control.

From a limited epidemiological and environmental beginning, public health has broadened its concern to take the lead in positive action for the advancement of people's health and well-being. Once the state health officer of Florida took a leave of absence from his position to lobby before the legislature for certain

health programs. Major developments in the field of public health today show that the cooperation of lawyers, legislative draftsmen and technical specialists is necessary to put across a public health program.

Every proposed public health program, which brings a NEW LOOK to Florida's public health, needs the concern and backing of the state legislators, the county officials, and the people on the street. This will allow the public health nurse, the sanitarian, nutritionist, sanitary engineer, laboratory technician, public health physician and other public health workers to be "doing their thing."

REQUIRED BY LAW

The Division of Health has many responsibilities to the people of Florida that are required by law. A few of these are:

- * control of communicable diseases, including the venereal diseases;
- * diagnosis and treatment of cancer and distribution of insulin to indigent patients;
- * inform the public of health conditions of the state;
- * collect and issue certified copies of birth, death, marriage and divorce certificates;
- * regulate the practice of midwifery;
- * distribute prophylactic drops for newborn infants' eyes;
- * report to county school superintendents the exceptional children needing special educational services;
- * investigate sanitary conditions within the state and enforce rules concerning sanitation;
- * inspect and license hospitals and all types of nursing homes and homes for the aged;
- * provide laboratory services for many types of examinations, including syphilis, substances containing narcotics and blood alcohol testing devices;
- * approve plans for public water, and sewerage systems;
- * provide for the inspection and labeling of all bedding and bedding material.

AND THIS IS NOT ALL OF THE RESPONSIBILITIES

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JAMES A. BAX
Secretary

WILSON T. SOWDER, M.D., M.P.H.
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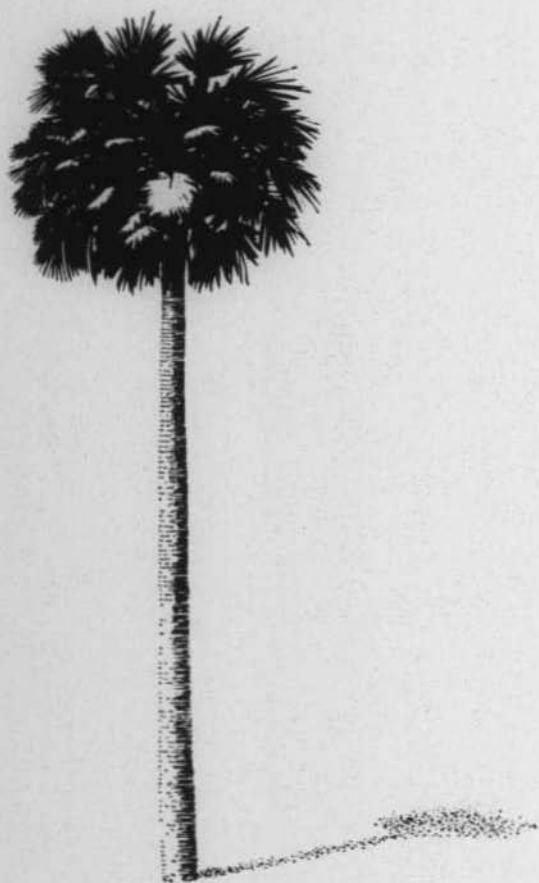
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FLORIDA HEALTH NOTES



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*Recreational
Sanitation*

FLORIDA STATE LIBRARY



AT THE BEACH—Sanitary facilities for beach areas are inspected regularly by the county health departments. Portable food service vehicles which serve beach areas (right) are also inspected by sanitarians.



Recreation is a major industry in Florida. From the glittering hotels of Miami Beach to the woody, lake-side parks where campers "rough it," recreation is enjoyed by Floridians and the 21 million tourists who visit the state each year.

People from all over the world come to fish, swim, sun and enjoy the pleasures of the Sunshine State. To make their visits more enjoyable, federal, state and local governments have built and maintain a variety of parks and attractions. Private companies and individuals have built commercial attractions to amaze, thrill, enchant or entertain these millions of visitors.

RECREATIONAL SANITATION

Walt Disney World, the largest commercial attraction ever conceived by American industry and technology, is under construction in Central Florida. This vacation and entertainment complex, scheduled to open in October 1971, is "dedicated not only to how people play; but also to how they live and how they will work."

Recreation is an important part of human life. The mark of an emotionally mature individual is how he voluntarily uses his leisure time. Recreation contributes to the satisfaction of fundamental human appetites. The hungers for belonging to a group,

RECREATION IN FLORIDA—(Cover photo)—Palm trees shade a modern trailer park in Florida (bottom). Traveling by trailer is popular in the Sunshine State. Above is an artist's conception of Walt Disney World now under construction near Orlando.

for being wanted, and for self-expression, recognition, creativity, competition, security and adventure are among those most commonly recognized.

Recreation provides the sanity and balance in a society where most jobs, no matter how satisfying, provide little opportunity for individual expression. It serves as an outlet for emotional and creative desires by leading them into productive, satisfying and socially-approved channels.

For many decades our forefathers were influenced by the attitude that "play" was a necessary evil for small children. It was hardly fitting pursuit for grown-up men and women who frequently had to work 10 or more hours a day, seven days a week, and were not free to pursue leisure activities. Entertainment was usually limited to band concerts on holidays and trips to the community park where there were rides and picnic areas.

It is only in relatively recent times that recreation for all people has come to be an acceptable part of our culture. Federal, state and local governments have established community centers, park districts and forests and hundreds of other projects to stimulate recreation.

In Florida and throughout the nation, recreation has become a huge industry. Tourism is the leading industry in the Sunshine State and the visitors annually spend some \$3 billion. The growth of the tourist industry has been in direct relationship to the control

FLORIDA HEALTH NOTES

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ENTERTAINMENT—Florida has many natural, historical and commercial attractions for its residents and visitors. The Division of Health and county health departments are responsible for protecting the public's health at these attractions.

of mosquitoes in Florida by the Division of Health. Since 1953, when the mosquito control districts were formed under the supervision of the Division of Health, the numbers of salt marsh mosquitoes dwindled and the tourist industry has thrived.

But there are other aspects of the tourist industry in which the Division of Health has an interest. This issue of **Florida Health Notes** is devoted to "recreational sanitation"—that component of state parks, commercial attractions, animal exhibits, and travel trailer parks which protect the comfort and health of visitors. These components include food protection, sanitation of food establishments, trash collection and disposal, water supplies and sanitary facilities.

Many Things to Do in Florida

Mr. and Mrs. Joe Smith and their family like to go camping. They may travel down the Florida Keys where they camp beneath swaying palm trees; or they may camp in the pine forests of Northern Florida, along the sandy beaches of the Gulf of Mexico and the Atlantic Ocean, or on the shores of a lake abounding in fresh-water fish.

They may visit one of Florida's 41 state parks, of which 32 have campsites; 36 have boating; 37 have fishing; 26 offer swimming places; and nearly all have tables and barbecue pits for picnics.

For historical moments, they may go to the Castillo de San Marcos National Monument in St. Augustine, the John Gorrie Museum in Apalachicola, the Madira Bickel Mound on Terre Ceia Island, or the site of a Civil War battle at Natural Bridge.

They may take their "home" with them and stop at a commercial travel trailer park and visit one of the attractions that abound in Florida. Whenever possible, the Joe Smith family likes to visit a zoo, private amusement park, commercial attraction, the Florida State Fair at Tampa, a county fair or carnival. In its community, the family participates in recreational activities at the city parks, golf courses or tennis courts.

The Smith family has the leisure time to visit the parks and other recreational areas of the state and participates in community activities. Mr. Smith works an average of 40 hours a week; he usually has a two or three-week vacation each year; there are usually several three-day holiday weekends.

The automobile also has made state parks possible by providing rapid transportation to these recreational sites. Florida's network of major highways has made travel to the parks and attractions easy, and the climate is ideal for year-round camping.

SANITARY INSPECTION

—Equipment at a state park lunch counter is checked by a county health department sanitarian.



and other outdoor activity. Travel trailers, campers and motor homes have replaced the old-style tent. Now there are many of these self-contained travel units in every park. On weekends and during the summer months, when children are out of school, many of the state parks and private travel trailer parks turn away hundreds of prospective campers because of the lack of space.

Protecting the People's Health

Wherever people work, play or gather for recreation or any event, the Division of Health is required by Florida Statutes to protect the people's health. The county health departments carry out this function by inspecting public buildings and grounds, campsites, commercial attractions, food service establishments and trailer parks. The U. S. Public Health Service has jurisdiction over facilities in national parks—working closely with the U. S. Department of the Interior—but these parks are usually in compliance with local laws.

Many private and governmental organizations are interested in providing recreational facilities for the people. Because some establishments are more interested in turning a profit than protecting their customers' health, there is a need for standards regulating the disposal of sewage and solid wastes, the purity of water, and the protection of food. Under Florida Statutes, the Division of Health provides these standards.

When thousands of people gather for such events as a "rock festival" or the races at Daytona Beach or Sebring, the health agencies must see that there are adequate sanitary facilities for the comfort of the people visiting the event.



The Administrative Code says that rest room facilities should be provided for each sex in places of employment and places serving the public. This includes restaurants and other food service establishments, public waiting rooms, places of amusements, public buildings, stores, parks and bus, airlines and railway stations.

An auditorium or stadium seating 4000 persons needs 12 toilets and seven lavatories in the women's restroom; and eight toilets, 10 urinals and seven lavatories in the men's room. There should be nine drinking fountains.

When 100,000 persons attend any type of outdoor event, the management should furnish 172 toilets and 86 lavatories for wom-



AT THE STATE PARK—
A sanitarian checks the restroom of a state park (right). The facilities are connected to a small sewage treatment plant (opposite page).



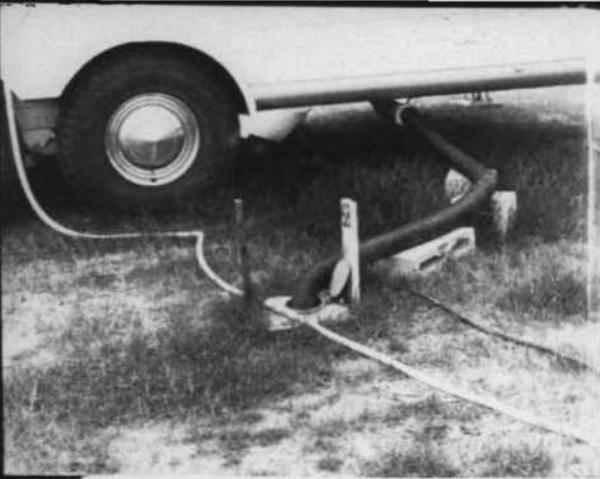
en; 170 urinals, 87 toilets and 86 lavatories for men; and 200 drinking fountains.

The Administrative Code states that sewage disposal should be to a public sewerage system, if available, or in a manner which is in compliance with the Code. Water supplies must be furnished in compliance with the Code. Cold drinking water should be from sanitary drinking fountains, or from containers in which the water does not come in direct contact with the ice. Where sanitary drinking fountains are not used, individual single-service drinking cups must be provided.

Each toilet room must be furnished with soap, preferably the liquid type, and provided with sanitary towels or hand-drying devices.

Water Supplies

A public water supply is described as one serving 25 or more persons, or otherwise making water available to public groups or the public in general. Potable water (that which is satisfactory for drinking, culinary and domestic uses) must meet the quality



GARBAGE CANS AND SEWAGE—Travel trailer parks are required to provide customers with an approved system of solid waste disposal (left) and connections to an acceptable sewage treatment system (above).

standards of the Division of Health and the U. S. Public Health Service. Potable water is required for schools, hotels, eating places, stores, factories, camps, institutions, public buildings, and other places where water is served to employees, customers, patrons or the general public. This water must be secured from public water supplies, where available, or from another approved source. However, this does not prohibit large hotels, institutions, or industrial plants from using their own private supplies where these supplies meet the same standards as public water systems.

Sewage Treatment

Florida Statutes state that it is unlawful to dispose of excreta, sewage or other waste water without providing proper treatment approved by the Division of Health. The safe disposal of human and domestic wastes in recreational areas is necessary for the preservation of the surface and ground waters and the restoration of such waters to the best possible conditions consistent with public health and welfare.

Proper sewage disposal assists in the propagation and preservation of fish and wildlife, and is essential to protect the visiting public, employees and nearby communities from diseases transmitted through sewage.

Sewerage systems that carry and treat domestic and other liquid wastes and any installation, extension or alteration of such systems must be approved by the Division of Health.

Many state parks are in isolated areas where it would be expensive and impossible to attach comfort stations to public sewerage systems. Many of the newer parks have these facilities connected to their own small sewage treatment plants. Facilities in some parks, including the Everglades National Park, are connected to septic tanks.

Sanitary facilities for private trailer parks, camps, commercial exhibits and all other recreational establishments should be connected to a public sewerage system, whenever possible, or the sewage disposal method should be adequate and sanitary as approved by the Division of Health.

State regulations forbid the parking of a trailer home used for occupancy on the watershed of a stream or water course used as a source of water supply. It is also unlawful to empty a receptacle containing human wastes or waste water from a trailer home except into a sewerage system, or into a privy of a type approved by the Division of Health.

Solid Waste Collection and Disposal

Refuse collection and disposal is sometimes a problem where people gather. Public health problems are often associated with improper storage, collection and disposal of refuse in recreational areas. The full appreciation of these areas by the public is sometimes diminished by the disorder of accumulated refuse and litter.

Experience has shown that the proper handling of refuse in recreational areas greatly reduce the fly, rodent and other insect problems. In addition, there are significant relationships between the incidence of certain diseases in humans and animals and im-

proper refuse disposal. Many campers are annoyed by fire, odor and unsightliness which are created by poor refuse handling practices.

Solid waste and food scraps should be stored in durable containers that are water-tight, rust resistant and easily washable. They should be equipped with tight covers and the containers may be placed in racks or holders to prevent their being tipped over. Collection should be daily for food establishments and twice weekly (at least) in park's residential and picnic areas, campgrounds and parking areas. Solid waste should be transported in covered vehicles and disposed by incineration in an approved facility, by sanitary landfill, or by other method in compliance with the Administrative Code.

Food Service

Both the food and beverage industries and public health have important roles in helping to insure that only safe, wholesome food and drink are offered to the millions who patronize the restaurants, lunch counters, refreshment stands and other food establishments in recreational areas.

The Division of Health and county health departments are required by law to see that the operations and techniques, including the preparation and service to the customers, are such that food is properly protected at all times against contamination and infectious agents.



Many travel trailers, motor homes and campers are equipped with their own cooking and dishwashing facilities. Campsites in state parks usually have barbecue grills and tables where simple meals may be served.

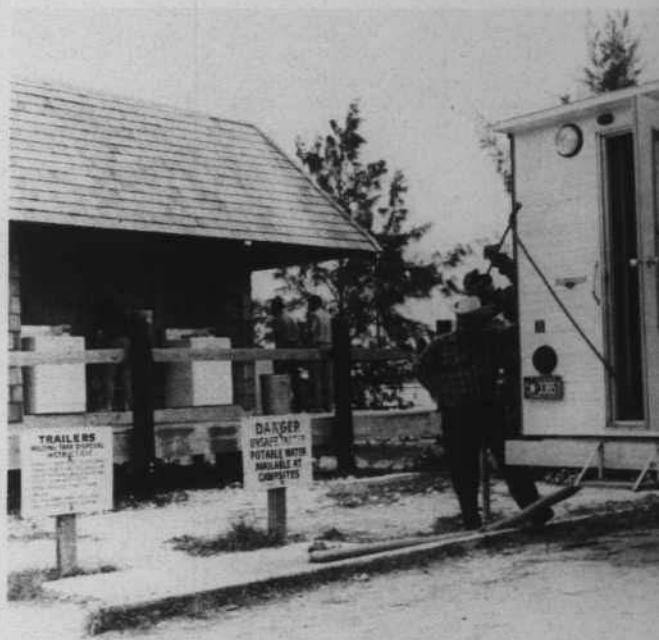
In those camps where kitchens are provided, and where families or individuals do their own cooking, adequate sinks, with cold and hot water and places for the safe storage and refrigeration of food are necessary. Where cooking facilities are used in common, the kitchen should be screened to protect against flies.

Where there is a central mess, or multi-family feeding facility, such as in a Scout Camp or recreational facility, the dining room and kitchen must be in accordance with the State Administrative Code.

Food service establishments at fairs, carnivals, beaches and state parks are inspected regularly by sanitarians from the county

THE OUTDOOR LIFE—

Camping in state parks is a popular recreational activity in Florida (opposite page). Many of the state parks have facilities (right) where self-contained travel trailers can dispose of human waste and waste water.



health department. Even where food may be served in packages or very limited menus are served and dishes used, the food service establishment must have three-compartment sinks and use sanitizing agents for dishes.

Some counties issue health cards to all employees in restaurants, cafes, food stands—even those who work in hot dog stands or in carnival booths. The applicants may be required to have an X-ray and blood test before receiving their health cards. During the first week of the 1970 Florida State Fair, three persons suspected of having tuberculosis were detected through the health card survey of the Hillsborough County Health Department.

Camping in State Parks

Florida is the "playground of the nation" and its state parks and historical monuments are outstanding as historical and scenic places. Battlefields, forts and museums mark many historical sites. Public and privately-owned historical spots are so numerous in Florida that almost every curve in the road has a special meaning. Included in the list are monuments, museums, houses, and even whole cities, such as St. Augustine and Pensacola.

Florida's state parks offer campgrounds in a variety of settings. Anastasia, Bahia Honda and Little Talbot Island are fine examples of excellent beaches.

Collier-Seminole is a subtropical wilderness.

John Pennekamp offers the continent's only underwater living coral reef.

Fort Clinch, Tomoka and Fort Pickens are examples of historical sites dating back to the days of the Spanish.

Manatee Springs and Suwannee River offer skin and scuba diving.

Florida Caverns extend an invitation to underground exploration.

Torreya and Falling Waters have nature trails.

Since camping is possible the year around in Florida, the Sunshine State has found it advisable to offer extensive facilities rang-



WILDERNESS PRESERVED—The Everglades National Park is a vast complex of plant and animal life found nowhere else in the United States. Sanitary facilities (inset) are provided at the several campsites, picnic areas, and visitor centers.

ing from modern well-developed parks to remote forest retreats. In many of the public and private areas, campers are free to enjoy the natural beauty of Florida's beaches, lakes, rivers and woodlands. All of Florida's 32 state parks that have camping sites are open 365 days of the year. Each park opens no later than 8 a.m. and closes at sundown.

These state parks have campgrounds, with from 20 to over 200 campsites. They have picnic tables, electrical hook-ups, barbecue grills, playground equipment, and restrooms equipped with hot and cold water, showers, lavatories and laundry tubs. Many also have sanitary dumping stations for self-contained travel trailers, coin-operated washing machines and driers.

(Continued on page 130)

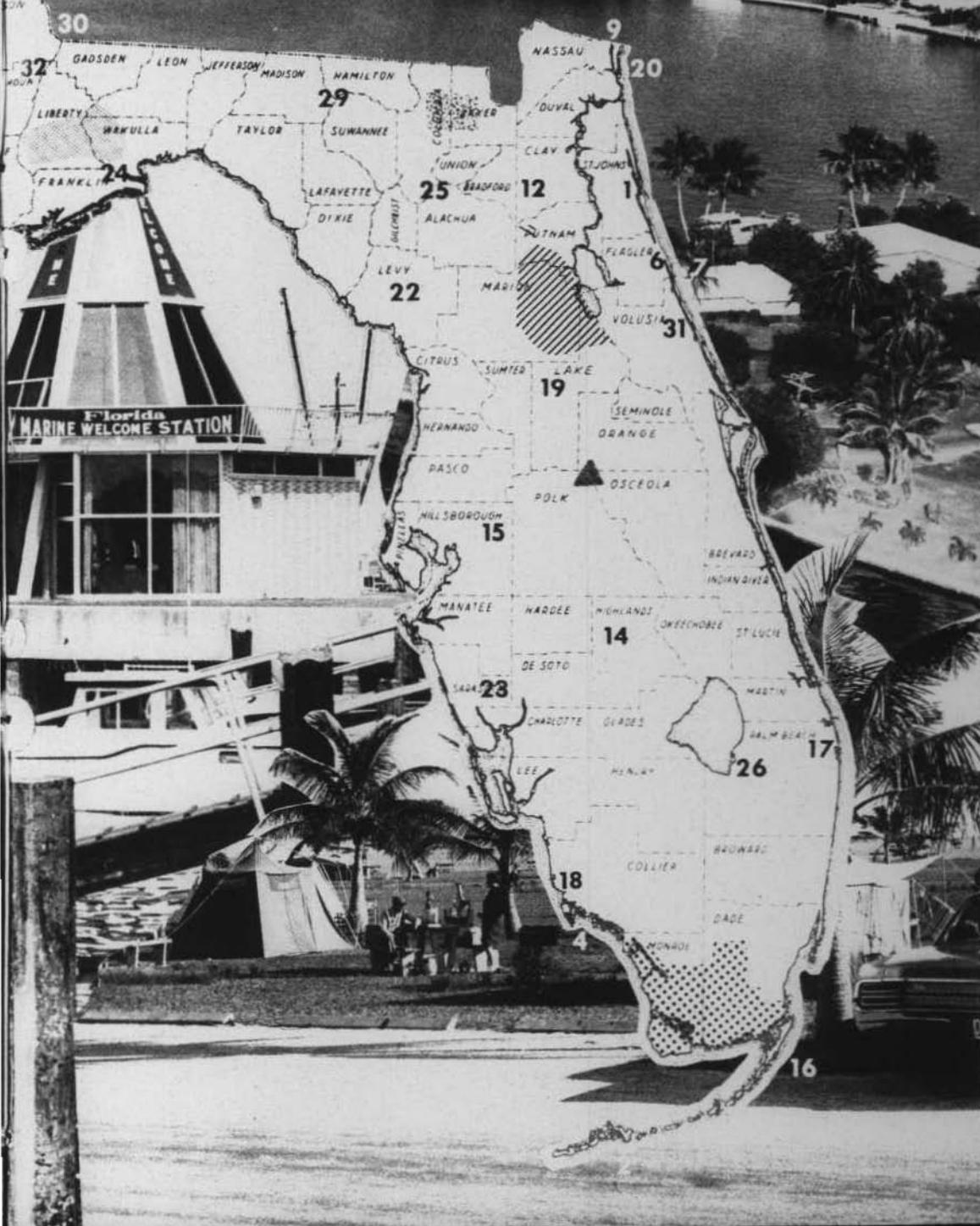
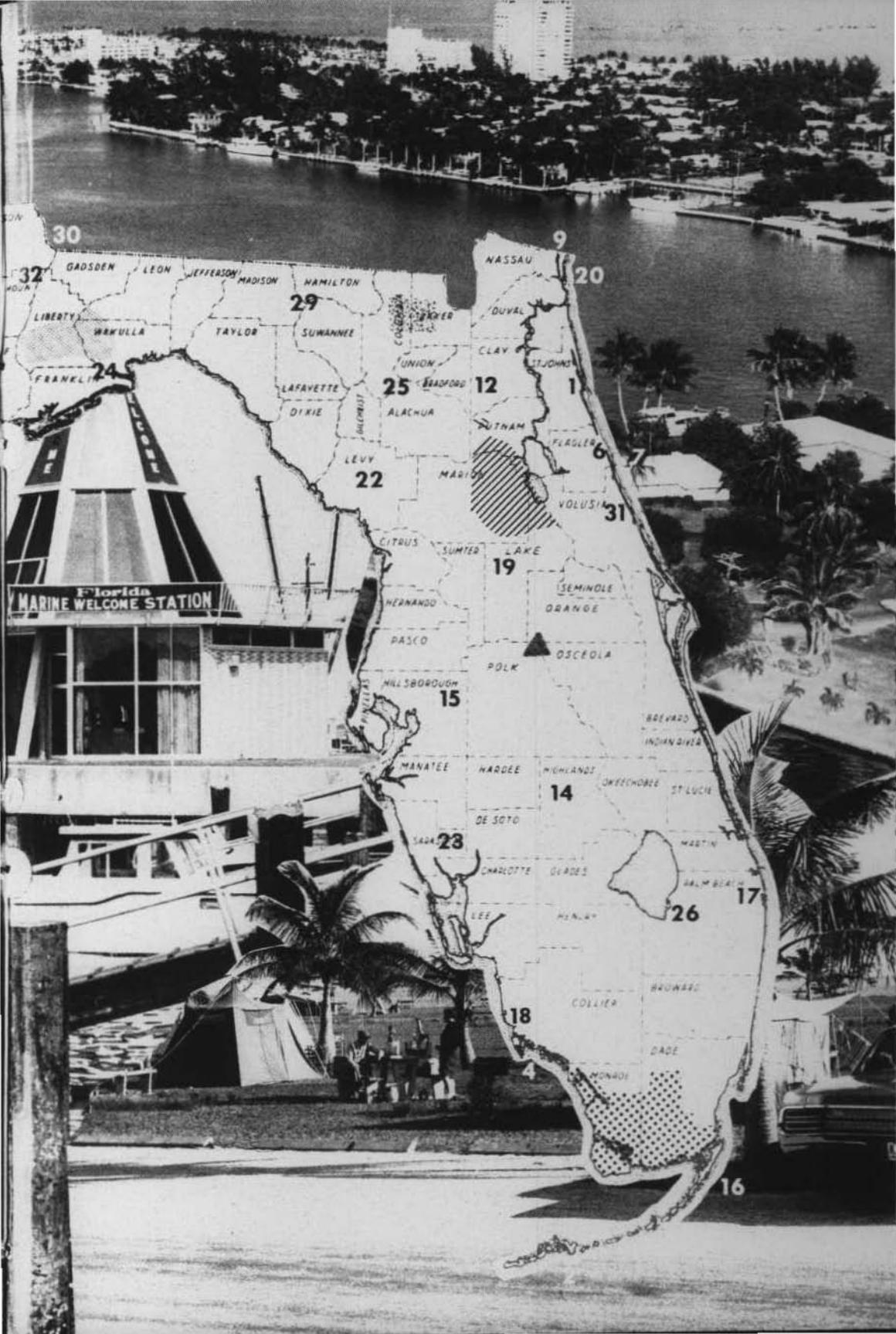
STATE PARKS

1. Anastasia
2. Bahia Honda
3. Basin Bayou
4. Collier-Seminole
5. Falling Waters
6. Faver-Dykes
7. Flagler Beach
8. Florida Caverns
9. Fort Clinch
10. Fort Pickens
11. Fred Gannon Rocky Bayou
12. Gold Head Branch
13. Grayton Beach
14. Highland Hammock
15. Hillsborough River
16. John Pennekamp Coral Reef
17. Jonathan Dickinson
18. Koreshan
19. Lake Griffin
20. Little Talbot Island
21. Long Key
22. Manatee Springs
23. Myakka River
24. Ochlockonee River
25. O'Leno
26. Pahokee
27. St. Andrews
28. St. Joseph
29. Suwannee River
30. Three Rivers
31. Tomoka
32. Torreya

NATIONAL PARK AND FORESTS

- ❖ Everglades National Park
- ❖ Apalachicola National Forest
- ❖ Osceola National Forest
- ❖ Ocala National Forest

▲ DISNEY WORLD



The restrooms, lavatories, showers and laundry tubs, as well as the sanitary dumping stations and washing machines, are connected to septic tanks (in older parks) or to small sewage treatment plants in newer parks. These facilities are kept clean or in operation by park staff members; plans for the sewage disposal systems are approved by the Division of Health before installation and inspected by county health department sanitarians.

Establishments in state parks that sell food or serve meals are also inspected by county health department sanitarians. Most of these places are operated by private companies under contract with the state park agency.

County and City Parks

Many cities and counties maintain parks where people can picnic, swim, boat or pursue other activities. Many of these have boat launching ramps and nature trails. Many cities have public golf courses and neighborhood parks with tennis courts, zoos and other attractions. These usually have restrooms which are inspected by county health department sanitarians. Wastes from zoo's animal cages are often trucked off to a landfill.

National Parks and Forests

National parks and forests are maintained to preserve fast disappearing wilderness, swamps, timber and scenic wonders, or to create recreational facilities for present and future Americans.

Florida's own Everglades National Park was established in 1947 to protect the sprawling subtropical wilderness—a complex of unique plant-and-animal communities—which was threatened with destruction. Some of the vegetation, such as the Everglades, and some of the animals and birds—crocodile, manatee, roseate

For additional information concerning state parks, write:
Florida Department of Commerce
Division of Commercial Development
Tallahassee, Florida 32304

spoonbill, reddish egret, wood ibis, and bald eagle—are rare or found nowhere else in the United States.

The best time to visit the Everglades National Park is during the cooler months as the mosquitoes make it unpleasant during the summer. Visitors are usually those who are on winter vacations or retired.

The park, located on Route 27 west of Florida City, has a visitor center just inside the entrance. From this center, a road



HOT DOGS IN TAMPA—A sanitarian checks the health card of a food service stand employee at the Florida State Fair (left) and then stops to watch one of the latest "rides" on the Midway.

winds 38 miles through the Everglades and mangroves to Flamingo where there is a 200-unit motel, restaurant, service station, picnic area, campground with 308 campsites, sightseeing boats and exhibits.

Between Flamingo and the entrance are located several nature trails (Pineland, Pa-hay-okee, Mahogany and Mangrove), a campsite with 112 sites at Long Pine Key, and a visitor center at Royal

Palm where there are exhibits and wildlife and jungle trails through tropical hardwood hammocks.

The Everglades, the only national park in Florida, is maintained by the National Park Service of the U. S. Department of the Interior. All sanitary facilities, while in keeping with the Florida Administrative Code, are approved by the U. S. Public Health Service. All campsites, comfort stations, employees' houses, maintenance shops and offices are on septic tanks and stabilizing ponds (lagoons). Plans for the future include a sewage treatment plant to replace the lagoon now in use at Flamingo. Water systems include wells and pumps at the various developed areas of the park.

National forests are under the jurisdiction of the U. S. Department of Agriculture. Many of the camps and recreational areas located in these forests are leased from the Federal Government by private companies or individuals. Sanitary facilities at these private camps, such as those in the Ocala National Forest, are inspected by county health department sanitarians.

FLAMINGO COMMUNITY

—These long-legged, long-necked birds delight thousands of visitors to a commercial attraction. Florida has some of the finest attractions in the world to entertain visitors.



Fairs and Carnivals

Nearly everyone enjoys the excitement and color of a county or state fair. The thrilling rides, the spectacular entertainment, the beautiful animals and exciting races are all part of the fair. Cotton candy, hot dogs and popcorn, and beverage to wash them down are also a part of a visit to the fair.

A fair attracts hundreds, or sometimes thousands of people and whether it is the State Fair, any one of the county fairs, or a neighborhood carnival, the county health department is responsible for checking the sanitary facilities and food service.

The neighborhood carnival usually has only one or two food stands dispensing hot dogs, beverage, cotton candy and candied apples. The county fair may have a little more extensive food service, and these require only a minimum of supervision by the county health department sanitarians.

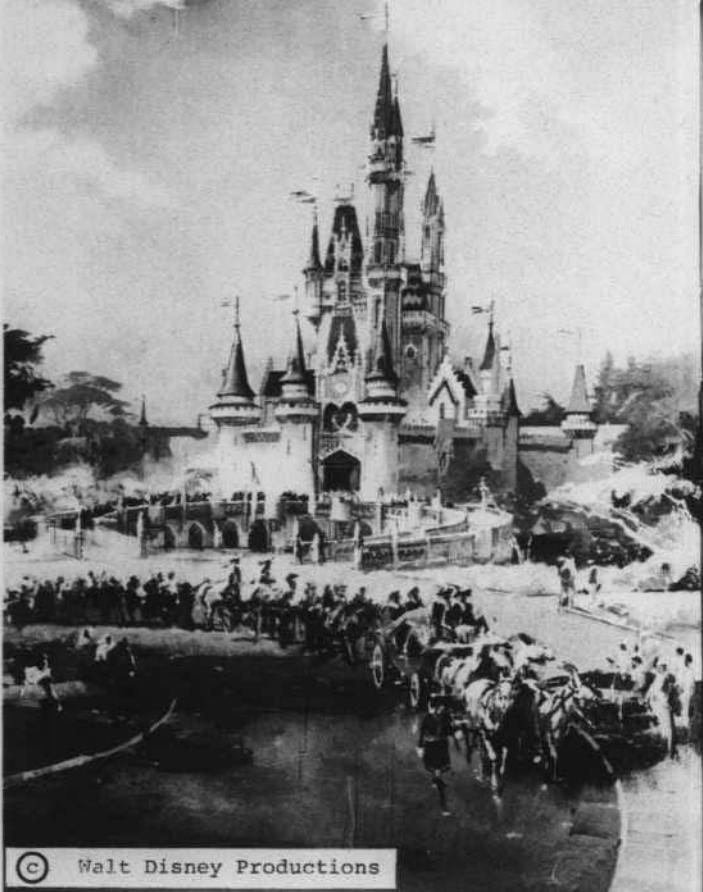
Because of its huge size, the Florida State Fair occupies the full time of one or two sanitarians from the Hillsborough County Health Department during its 12-day run. The fair attracts a half-million persons to view the various displays, animals and midway.

As at all fairs, food and drink are an important part. During the run of the State Fair the County Health Department issues an average of 100 permits to a variety of stands and restaurants that sell everything from regular meals and Chinese food to packaged pastries and cotton candy.

One thing that the sanitarians look for is proper preparation of food. At one booth, a church group was selling unique pastries. Because the women were honest, the sanitarians discovered that the pastries were being made in the homes of the church members and not in the approved kitchen which the church already had. The sale of the pastries was halted temporarily, but allowed to continue when the women realized that due to health reasons they could not make the pastries in their homes.

Each food worker at the State Fair was required to have a health card. To obtain this card, the worker had to submit to an X-ray and blood test. Because many of the food workers were transients and often failed to report back to work after receiving

THE MAGIC KINGDOM—
Cinderella's Castle, a full-size structure, will be one of the many attractions in the Walt Disney World's Theme Park and Vacationland.



© Walt Disney Productions

their first pay check, the sanitarians had to keep a record of the newly-hired food workers. On the other hand, many of the experienced workers readily kept their health cards up-to-date.

To keep rodents at a minimum, the sanitarians insisted that the operators clean up their stands at the end of each day. Sometimes an early morning check turned up a candy stand operator who failed to clean his machine and pans, but many of the food stands were cooperative and complied with the requests for good food handling practices.

Another aspect of the State Fair that once required the attention of the sanitarians was the removal of animal wastes and bedding from the livestock buildings. Usually these wastes were

removed from the sheds each day and taken from the fairgrounds in city trucks to a landfill.

The Commercial Exhibits

Florida has some of the finest commercial attractions in the world bidding for the attention and support of Floridians and their visitors. These privately-owned attractions offer underwater viewing and shows, water skiing entertainment, animal exhibits, and lush tropical gardens. There are wax museums, deer ranches, alligator farms, marine shows, live entertainment, circus acts, wild west shows and antique automobiles.

Many of these exhibits are members of the Florida Attraction Association that subscribes to an honor code that includes

- * fair admission prices,
- * ethical operations,
- * courtesy,
- * cleanliness, and
- * quality exhibits or entertainment.

Some of the attractions take advantage of natural resources, such as the large flowing springs; while others are built to entertain by recreating past history or the life of yesterday.

The Division of Health's sanitary engineers approve the plans for sewage disposal and water supplies for these attractions. County health department sanitarians check the restaurants, snack shops and beverage dispensing booths to make sure that food is wholesome and properly handled, and the establishments are clean.

Because pleasing the public is their stock-in-trade, these attractions seldom give the health agencies cause for concern. Their restaurants and kitchens are usually of the latest design. Their restrooms are clean. Only infrequently does an animal exhibit become a sanitary nuisance, but these exhibits are usually one of the less popular attractions.

Walt Disney World

The State Legislature in 1967 organized the Reedy Creek Improvement District to help the Disney World Project begin develop-

ing 27,000 acres of Central Florida as a recreational attraction that would annually draw millions of people to Florida.

This unique development in entertainment and leisure started with the Disneyland Park in California. Some 93 million persons have visited this park. The popularity of the attraction led the Disney organization to start the East Coast project. The late Walt Disney said, "With the technical know-how of American industry and the creative imagination of the Disney organization, I'm confident we can build a living showcase that more people will talk about and come to look at than any other area of the world."

A UNIQUE BASEMENT—A system of basement corridors (Utilidor) is being built under the Disney World's Theme Park to provide a method of bringing utilities and supplies directly to the exhibits and buildings.



The foundation for Walt Disney World is rooted in the expanding tourist market of Florida and in the unique experience and success of Disneyland. More than 21 million tourists visited Florida in 1968, and it is estimated that 27 million will travel to the Sunshine State during the first year of Walt Disney World's operation.

The project will have a beneficial effect on the tourist industry of Florida. But millions of added tourists bring health problems for which the Division of Health, the Disney Project and Florida must plan. Additional motels, restaurants, service stations and other service establishments must be built to serve these added millions. The businesses will need sewage treatment plants, potable water supplies, solid waste disposal, and other needs which the Division of Health must supervise.

Because of its size and scope, the master plan for Walt Disney World will take many years to complete. Plans for the future include:

A complete vacationland with resort hotels, motor inns, and campsites, accommodations featuring a wide variety of land and water recreational facilities;

- * a Magic Kingdom theme park similar to Disneyland;
- * an entrance and reception complex to receive and welcome visitors;
- * an airport of the future with service for private, and executive airplanes, as well as commercial commuter service;
- * an industrial park to showcase American industry at work;
- * a transportation system to link the many attractions of Walt Disney World; and
- * an Experimental Prototype Community of Tomorrow where, as Walt Disney said, "People actually live a life they can't find anywhere else in the world."

Phase One—the theme park and two of the resort hotels—is scheduled for completion by October 1971.

Water Planned for 20 Years

Plans are being made by Disney World for the proper use and conservation of water. The project will be subject to four different categories of water use; irrigation of public and private land areas;

residential water use; hotel-motel domestic water use; and the need for the various attractions of the Theme Park.

Water requirements have been estimated for the first 20 years of operation. Because much of the project will be landscaped with trees, shrubs and grass, irrigation will require a large portion of the water requirements. The estimated use is a maximum of 8.43 million gallons per day during Year One, and 41.3 million gallons per day during Year 20.

The residential areas and motels, hotels and theme park are estimated to require an additional amount of water ranging from 1.45 million gallons per day the first year to 12 million gallons per day in 20 years. Additional water will be required for fire protection.

Water will come from surface and ground water and from deep wells. This water requires chemical and bacteriological treatment for domestic use.

Waste Water from 100,000 Persons

The developers of Disney World contemplate an ultimate community having a combination visitor-resident population of approximately 100,000 persons generating some 10 million gallons per day of waste water.

Besides meeting the statutory requirements of the Division of Health and the Florida Department of Air and Water Pollution Control, the Disney organization requires that the project be a model community. The esthetic requirements probably would be more stringent quality control on the discharge of waste water within the property than any regulations that would be established by the Division of Health.

Waste water discharged on land or ultimately to water courses or ground water on Disney World must immediately lose their identity and be undetectable physically, esthetically or bacteriologically. The waste water will be equal or better than the surrounding receiving waters.

Design has been completed for a waste water plant that will be a pleasant place to visit, modern in appearance, with sophisticated controls. It will be a process industry ultimately, handling 40,000 tons of fluids a day. The design includes architectural treatment,



POPULAR RECREATION—Boats and yachts lie at anchor in a Florida marina. Many of these boats discharge their wastes directly into the water. At the present time there are no state or federal regulations regarding waste disposal from boats.

landscaping, plantings, lawns, tree screens, and other esthetic features found in waste water plants of progressive urban communities. Reclaimed waste water may be considered as a method of irrigating the golf courses.

A Solid Waste System

The objective of the solid waste system for the ultimate Disney World project is absolute public health protection. There would be no backyard incinerators, no garbage pails, no curbside collection of garbage and trash, and no noise, intrusion and other nuisances to residents. Also, the system would create a minimum of hazardous and undesirable jobs.

Solid waste would be divided into garbage and food wastes, special and unusual wastes, construction and demolition wastes,

PUBLIC POOLS — Travel trailer parks have swimming pools and other recreational facilities to attract visitors. Plans for these public swimming pools are approved by the Division of Health.



industrial wastes, and normal municipal wastes. An estimated daily amount of 36.9 tons daily is expected during the first year, and a daily output of 147.4 tons in ten years.

Because the state classifies the lands draining to Reedy Creek and Bonnett Creek as Class I water supply for downstream cities, a sanitary landfill for mixed refuse (paper, trash, foodwastes), is not permitted.

Construction and demolition and other stable solid wastes can be placed in a sanitary landfill on the property before the park opens. A permit is required by the Division of Health. The Reedy Creek Improvement District now has under contract a 100-ton-a-day incinerator. Project engineers are developing the plans for a full vacuum waste collection system for the Magic Kingdom Theme Park; and a commercial grinder for solid wastes in food service areas.

A system of basement corridors, called "Utilidor" is currently being built under the Theme Park to provide space for utilities and a passageway for the movement of supplies to the various exhibits and buildings. The underground complex will be connected to the service area and the Central Energy Plant. Foodstuffs and other supplies will be transported by small electric trucks in the

basements, rather than on public thoroughfares, where maintenance will not interfere with the public's enjoyment of the park.

Private Travel Trailer Parks

The development of good highways and the warm climate has brought "travel trailering" to Florida. The newest method of traveling is to "carry your house with you wherever you go" and the roads are swarming with various types of campers, travel trailers and motor homes. More and more of the 3200 trailer and mobile home parks in Florida are setting aside space for these travelers.

The newest parks have a patio for each trailer, bathhouses with laundry equipment, swimming pools, shuffleboards, courts, children's playgrounds and recreational buildings. Many are located on lakes and streams.

The parks have water, electrical and sewage connections; containers for solid waste collection; and dumping stations for self-contained travel units.

The Division of Health approves the plans for these parks, their water supplies, sewerage systems and plans for solid waste disposal. Sanitarians from the county health departments inspect these parks at regular intervals, and the Division of Health annually issues permits for their operations.

Yachts and Sewage Disposal

Boating is popular in Florida and each city has one or more marinas—either publicly or privately owned. Boat basins, small craft harbors and marinas, boat launching ramps and docking floats are but a few of the projects developed in recreational areas.

More and more of the boats are being built with galleys and toilet facilities. Therefore, body and kitchen wastes and other debris are being discharged into Florida's waterways, lakes and harbors. These threaten or damage such recreational activity as swimming, fishing and other aquatic sports.

Plans for marinas should include methods of collecting and disposing of these wastes. One Florida community requires that all yachts and boats in marinas within its city limits must be attached to on-shore sewage collection systems. The Division of Health has advocated the use of holding tanks in boats, but as yet,

there are no federal or state regulations regarding waste disposal from boats.

Sanitation of Bathing Places

Swimming, and such associated activities as sunbathing and wading, is one of the fast growing recreational interests in Florida. Nearly all of the state parks have bathing places; most private travel trailer parks and motels have swimming pools to attract tourists.

Public health authorities have been concerned for many years with sanitation of swimming pools and bathing places. The Division of Health approves the construction plans for public swimming pools and issues permits for both pools and natural bathing places. Water supplies are checked to make sure they meet drinking water standards. Water samples of bathing places, where runoff from the watershed may contaminate the water, are taken regularly and tested for harmful bacteria.

Having Protected Fun

The members of the Smith Family enjoy the pleasures of Florida. The travel trailer goes with them wherever they go. They make reservations at state parks and private trailer parks to assure themselves that they'll have a place to spend the night.

As they travel they have good times visiting the commercial attraction and historical monuments. They swim at the beaches and lakes, watch for rare birds along the nature trails, and enjoy the company of millions of Americans who visit Florida. A glance at the out-of-state license tags in the parking lot of any state park tells them that tourists come from throughout the United States, Canada and other countries to enjoy the hospitality of the Sunshine State.

The health and comfort of all of these visitors and Floridians who delight in recreational areas of the Sunshine State is assured by the sanitation programs of the county health departments and the Division of Health.

Illustrations on pages 113 and 134 courtesy of Walt Disney Productions; pages 113, 114, 127, 128, and 129 from Florida News Bureau; photographs on pages 117 and 132 taken at Busch Gardens, Tampa.

Division of Health of the Florida Department of Health and Rehabilitative Services

HON. CLAUDE R. KIRK, JR.
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JAMES A. BAX
Secretary

WILSON T. SOWDER, M.D., M.P.H.
Director

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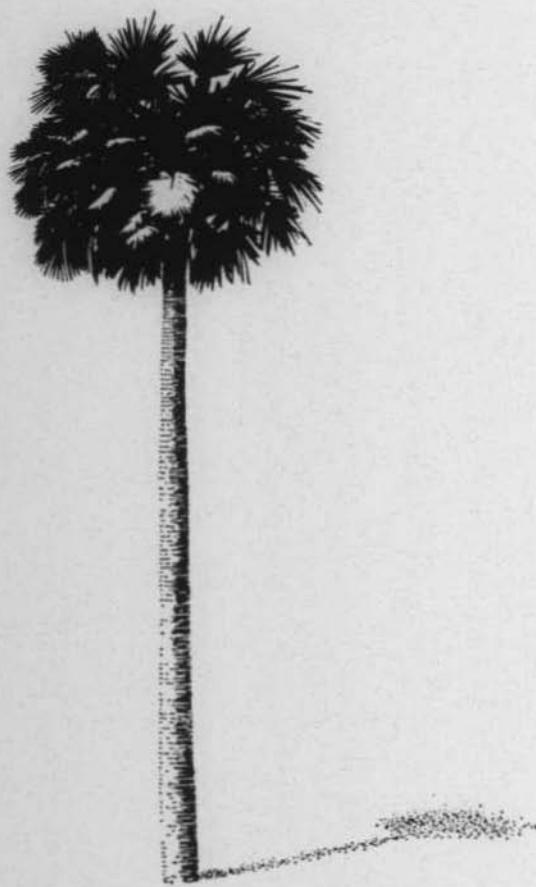
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Division of Health
of the
Florida Department of Health
and Rehabilitative Services

Post Office Box 210 Jacksonville, Florida 32201

FLORIDA HEALTH NOTES



VOLUME 62 — NO. 6

JUNE

1970

From The 1969 Annual Report

Facts on Florida's Public Health

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INFORMATION — The Division of Health keeps the people of Florida informed on the status of public health by television, radio and newspapers.



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The Division
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and Rehabili-
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From The 1969 Annual Report

FACTS on Florida's Public Health

You want to know about public health in Florida, Ma'am?

Just the facts!

This is a large request; but these are the essential details.

Public health is administered in Florida by the Division of Health and its partners, the 67 county health departments. Since July 1, 1969, the Division of Health (formerly the State Board of Health) has been a part of the Department of Health and Rehabilitative Services.

The Division of Health is responsible by law for the health of the people of Florida. It is also responsible for keeping the state officials and citizens of the Sunshine State informed on the status of public health.

What is public health?

Public health is the science and art of preventing disease, prolonging life, and promoting health and a productive life through organized community efforts by

- * controlling the sanitation factors of the environment;
- * controlling communicable infections;
- * educating the individual and community in personal hygiene;
- * organizing medical and nursing services for the early diagnosis and preventive treatment of disease; and
- * developing a way of life that insures everyone a standard of living adequate for the maintaining of health.

Who receives the benefits of public health?

The Division of Health is concerned about the health of the community as a whole—all Floridians and their 21 million annual visitors.

The health of the community is but the summation of the health of all its people. A state can never be healthier than the least of its citizens and it is upon the welfare of these individuals that the efforts of the Department of Health and Rehabilitative Services and of the Division of Health are concentrated.

A HEALTHY BABY AND MOTHER—Maternity and infant care projects, family planning, nutritional services and many other programs are aimed at improving the health of mothers and children.

What happened in public health in Florida in 1969?

The facts concerning public health in Florida during the past calendar year are presented in the **1969 Annual Report**, a 350-page document. This issue of **Florida Health Notes** will present information from this **Report** in a brief, concise form.

YES, MA'AM, THESE ARE THE FACTS!

These are the Facts on ... Help for Mothers and Children

The Division of Health and the county health departments were able to develop new services and/or extend existing services to more persons with additional grants for clinicians and nurses, drugs, supplies, diagnostic tests and other essential items.

Of the 233,000 indigent women of child-bearing age in Florida, 46,306 were provided with family planning services.

The state's five maternity and infant care projects, which had a combined budget of \$2.8 million, continued to grow despite budget cuts. The projects' objectives were to identify women who faced complications in pregnancy and reduce the number of premature deliveries and infant and maternal deaths.

The Dade County Children and Youth Project provided clinical services, social work, nutritional services, dental care, day care, homemaker services, and hospital and medical consultation and treatment to youngsters under 18 years of age who came from indigent families.

The Migrant Health Project provided medical, dental, nutritional, health education, sanitation and nursing services in 12

FLORIDA HEALTH NOTES

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counties which had heavy concentrations of migrant agricultural workers.

During the year, state and county health department nutritionists gave diet counseling and nutrition consultation to mothers and children in 45 counties who needed normal and therapeutic diets. Schoolchildren in 25 counties received nutrition education. Forty-five children with phenylketonuria (PKU), a physical condition that may lead to mental retardation, received diet counseling, and 41 received Lofenalac, a food substitute.

Sixteen full-time public health dentists, 10 part-time dentists and 11 preceptees served in the dental clinics and gave dental care to indigent schoolchildren and pregnant women.

The number of midwives decreased to 121. Presently the focus is on a certified nurse-midwife—a person who is a registered nurse and is a graduate from a school of nurse-midwifery.

These are the Facts on ... Prevention of Communicable Diseases

The Division of Health, through surveillance programs of collecting, tabulating, analyzing and feeding back information, serve as the central collection agency on data pertaining to com-





BATTLE AGAINST DISEASE—Many thousands of children were immunized in 1969 by county health departments and private physicians but reported cases of communicable diseases increased.

communicable diseases. Nearly all of the communicable diseases were on the increase during the year.

Sixty counties participated in the infant immunization program. Twenty-five counties had immunization levels of DPT (diphtheria-pertussis-tetanus) and polio approaching 75 per cent of 18-month-old infants. But even these counties had groups of unimmunized children who were responsible for the increase in preventable diseases.

Hepatitis increased from 1,149 cases in 1968 to 1,434 cases in 1969. Outbreaks in nurseries, kindergartens, elementary schools and communities throughout the state were investigated. Scrupulous personal hygiene in the classroom and home was promoted as a method of controlling the disease.

There were 192 cases of **serum hepatitis** noted in 1969, as compared with 128 cases in 1968. Dade County recorded 125 cases

during the year with self-administered drug users playing a major role in the increase.

The year 1969 was noted for the "diphtheria outbreak." Nine cases appeared in Miami and two in Jefferson County in late October and early November. Three youngsters died. A total of 22 cases, with four deaths, was reported during the year. Campaigns were held throughout the state in which more than 400,00 persons were immunized.

Influenza epidemic peaked in mid-January when more than 11,000 cases were reported in one week. The Hong Kong flu had disappeared by the end of March, but during the three-month period, more than 34,700 cases were reported. The death rate from pneumonia and pneumonia-like illnesses also rose proportionately during the period. A cluster of sudden deaths in previously healthy middle-aged men was investigated in Tampa and traced to an acute influenza illness.

The number of **red measles (Rubeola)** rose during the year with a 19 per cent increase in reported cases. An epidemic occurred in Jacksonville during the latter part of 1968 and early 1969 when more than 300 cases were reported. Approximately 50,700 children were immunized during a campaign; this did not include those immunized by private physicians. Twenty-eight cases still occurred in the city during the next 10 months—all in unimmunized children. Smaller epidemics occurred also in Palm Beach and Monroe Counties.

German measles (Rubella) increased to 2,107 cases without a general epidemic. A safe, single-shot vaccine was licensed and distributed for use by public and private medicine. Over 20 counties followed Lee County's lead in immunizing students in kindergartens, and first and second grades.

A total of 180 cases of animal **rabies** was reported in 1969—the highest incidence since 1948 with wildlife accounting for 96 per cent of the total. Raccoons led with 136 cases, followed by rabies in foxes and bats. Immunization of pets continued to keep down the number of rabies cases in domestic animals.

RABIES PREVENTION—Immunization of pets and domestic animals keeps down the number of rabies cases but 180 cases were reported in 1969—mostly in wild animals.



Florida had led the country since 1963 with highest rate of infectious **syphilis**. During 1969, it dropped to second place as early infectious and secondary syphilis declined for the third straight year. A total of 1,368 cases was reported, as compared with 1,959 in 1968. **Gonorrhea**, the second most dreaded venereal disease increased sharply with a rate of 27.4 per 100,000 persons and over 18,000 cases.

Over 727,000 persons were given 70mm X-ray screenings for **tuberculosis** by county health departments and tuberculosis associations. State units screened over 187,000 additional persons and more than 5,500 persons were suspected of having tuberculosis. There were 1,572 new cases reported in 1969.

Food poisoning cases more than doubled in 1969—not from a deterioration of food handling practices but through an awareness of food diseases and better reporting by the public.

These are the Facts on ... Assisting the Elderly

Florida's increasing elderly population is a special vulnerable group from the health standpoint. At the present there are some 850,000 persons over 65 in Florida, many afflicted with infirmities of the aged.

The most serious chronic disease problem is cardiovascular disease (heart disease) with atherosclerosis and rheumatic fever as the two leading causes of death from heart disease. Rural hypertension control programs and the screening of children turned up many new cases of high blood pressure. Over 1,370 persons received prophylactic drugs for prevention of secondary attacks from acute or chronic rheumatic heart disease.

Some 1,200 Florida residents died of diabetes in 1969, an increase of 10.2 per cent over 1968. Diabetic retinitis is a third leading cause of blindness — ranking behind cataracts and glaucoma. Over 4,000 medically indigent persons received insulin through county health departments.

An estimated 13,000 persons died of cancer during the year. Large increases were noted in cancer of the liver and lungs. The

KEEPING WELL—An active life keeps many of Florida's 850,000 elderly persons healthy. But many are afflicted with heart disease, cancer, diabetes and other chronic diseases.



of Health's cancer cytology program was successful with women in 58 counties screened with the Pap smear; 423 were negative for cancer; and 82 were positive.

Full-time glaucoma screening centers were in operation in Broward, Duval, Pinellas, Volusia and Palm Beach Counties. A total of 10,000 persons were screened with 1.97 per cent referred to physicians for diagnostic evaluation. Seminole County Health Department, which initiated a glaucoma screening program in 1972, has screened 2,417 persons with 44 diagnosed as positive for glaucoma.

Here are the Facts on Hospitals and Nursing Homes

Inspection and licensing of hospitals and nursing homes and regulation of providers of medical services continued throughout the year. A total of 13,046 practitioners of the healing arts was licensed by the Division of Health.



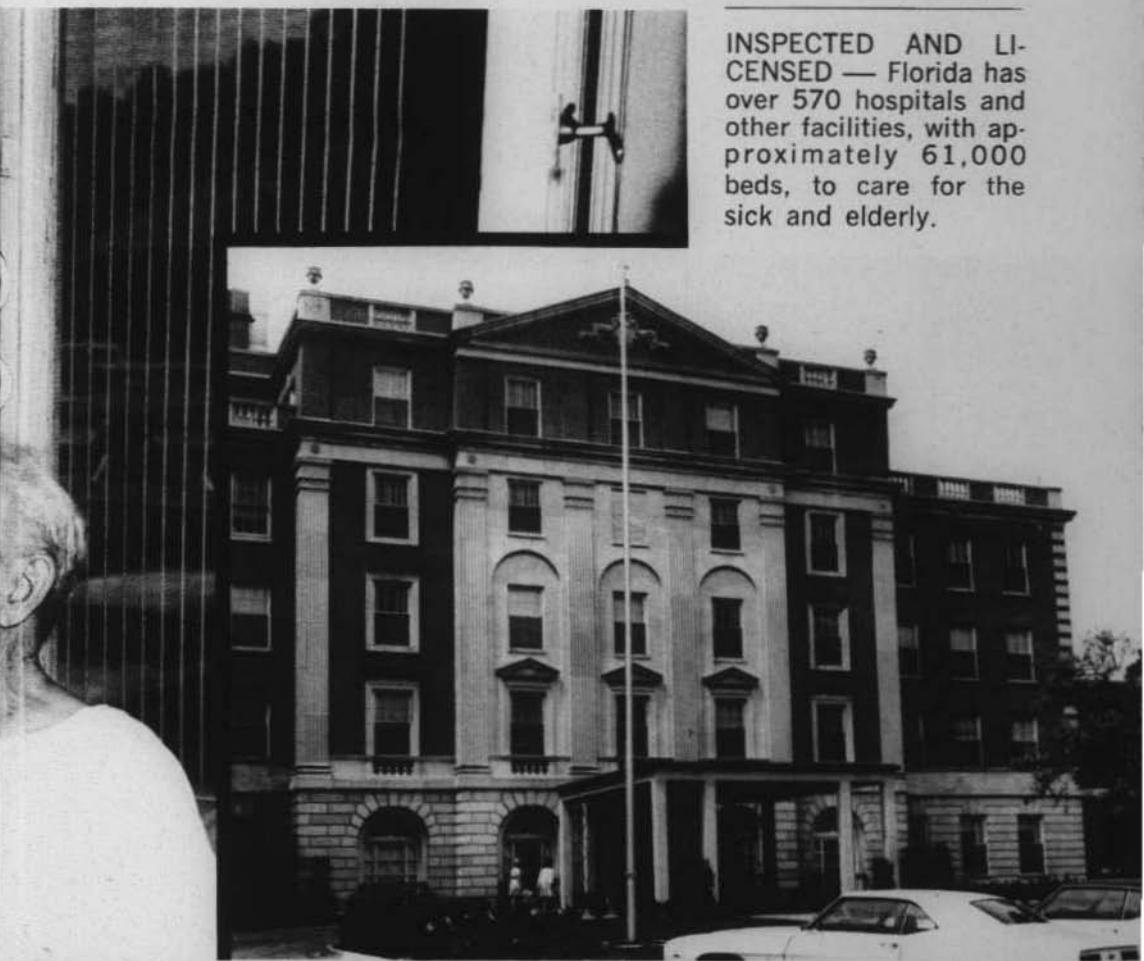
Licensed hospitals increased by six during 1969 and the Sunshine State had 198 hospitals with over 29,000 beds and 2398 bassinets.

A total of 174 hospitals participated in the two hospitalization programs—Hospital Service for the Indigent and Public Assistance Recipient Program. The average per diem rate for participating hospitals was \$44.49 at the end of the year.

Due to the implementation of the Medicaid Program, the 1969 Legislature reduced the state's appropriation for the county-state HSI Program from \$975,000 for the fiscal year of 1969-70. Total state-county payments were \$4.4 million for some 11,000 admissions and 102,933 patient days.

Expenditures for the state-federal PAR Program increased some 26 per cent over the 1968 amount of \$2.5 million and totaled

INSPECTED AND LICENSED — Florida has over 570 hospitals and other facilities, with approximately 61,000 beds, to care for the sick and elderly.



\$3.2 million, the highest since 1966. The program ended December 31, 1969, with the implementation of the Medicaid Program.

The Division of Health licensed 288 nursing homes, 78 homes for the aged, and 12 homes for special services which had a total of 32,561 beds. A state-wide survey of all nursing homes resulted from the criticism of the operation of nursing homes in Pinellas County. In an ambitious program to update and modernize nursing homes, arrangements were made with the office of the State Fire Marshall to inspect nursing homes to determine whether they met the standards of the Life Safety Code.

The Division of Health, at the request of the Division of Family Services, started to provide certification of nursing homes as to their capabilities and qualifications to participate in Medicaid and Intermediate Care Programs. The health agency was already providing certification of hospitals, extended care facilities, home health agencies and rehabilitation clinics which give services to recipients of Medicare.

These are the Facts on ... Environmental Health

Many problems of the environment continued to plague the Division of Health despite the loss of industrial waste and pollution control work on June 30, 1969, to another state agency.

The Division of Health continued to approve plans for waste water projects and processed 1,285 municipal waste projects which had a construction cost of \$85 million.

A total of 1,140 plans for water projects were approved; this did not include 676 municipal projects and 464 projects for subdivision type developments. Plans for 852 public swimming pools were approved. Construction costs totaled \$11.3 million. Bacteriological surveillance and other sanitation aspects were continued by county health departments over some 5,700 public swimming pools and 69 natural bathing places.

Surveillance over the shellfish and crustacea industries continued. Franklin County produced 85 per cent of the shellfish landings in the state—over 4.2 million pounds of oysters.

Continued emphasis on food sanitation was directed toward the prevention of foodborne illnesses. Particular attention was given

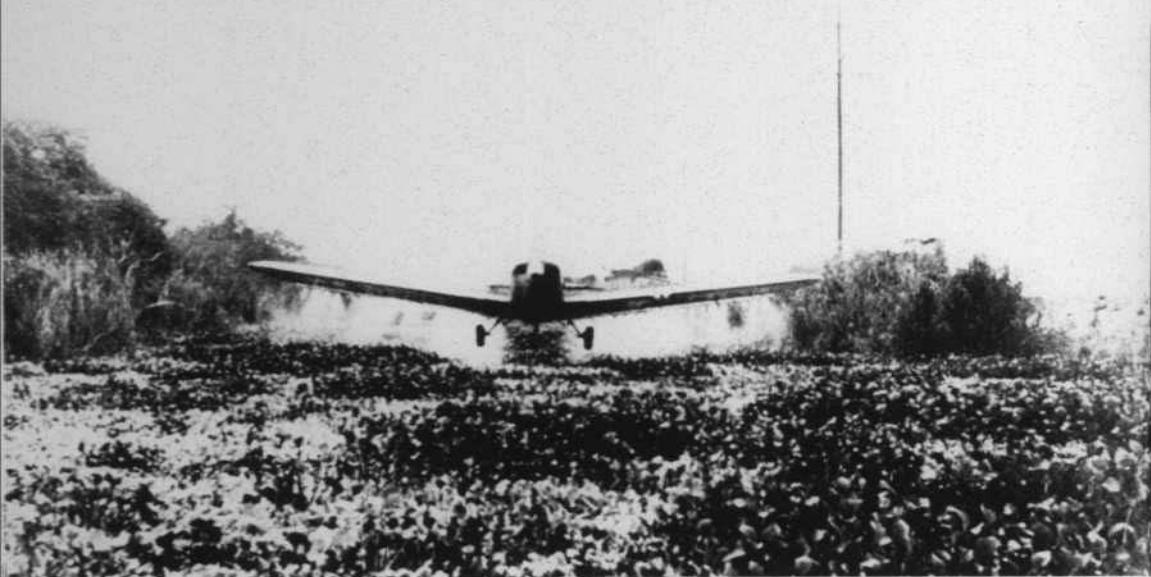


SOLID WASTE DISPOSAL—A county health department sanitarian checks out the operation of a sanitary landfill. The collecting and disposing of garbage and other wastes continue to be a problem in Florida.

to improving the practices relating to preparation, storage and handling of potentially hazardous foods.

County health department sanitarians recorded 33,275 food establishments, including 22,902 eating and drinking places; 1,127 food processing plants; 88 abattoirs; 183 shellfish and crustacea houses; 7,443 grocery and meat markets; and 1,525 other food establishments. Sanitarians made over 168,000 visits to these places in the interest of health.

Florida's 3,207 permitted trailer parks provided space for 146,322 trailers. Over 58 per cent of the spaces were served by



MOSQUITO CONTROL—The spraying of water hyacinths and other water plants for the control of vegetation in Florida's canals calls for the immediate control of mosquitoes.

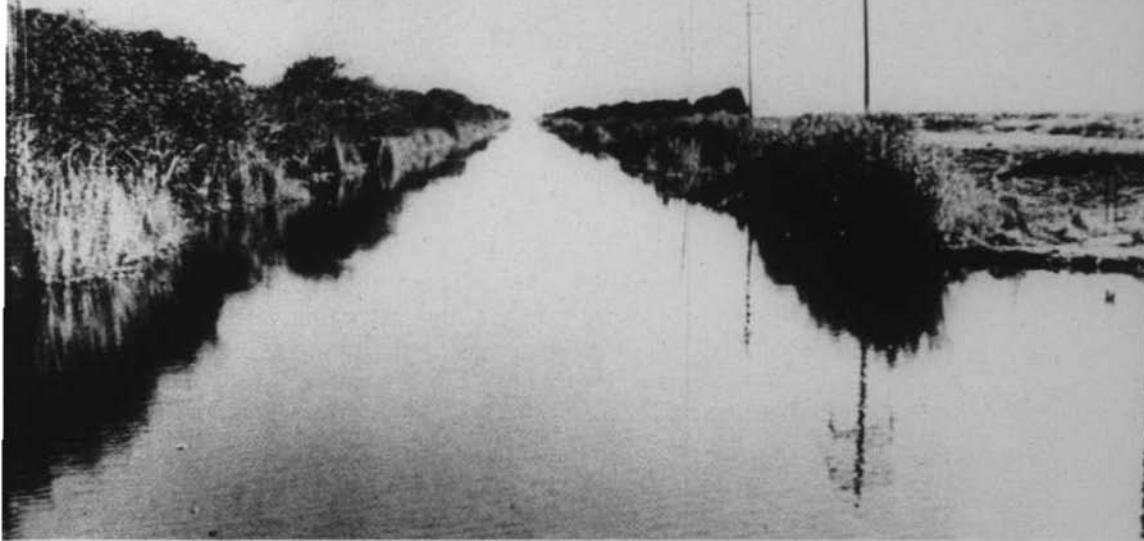
municipal or central sewerage systems; 63 per cent by municipal water.

A total of 577 licenses for radioactive materials was issued to medical, industrial, academic, civic defense and other nuclear service facilities. Radiological surveillance was maintained at nuclear-powered generating stations under construction at Crystal River and Turkey Point; plans were made to set up surveillance at a new electricity generating station near Fort Pierce.

These are the Facts on ... Mosquito and Disease Control

St. Louis encephalitis virus was recorded in the Sunshine State for the first time since 1962. Late in the year three human cases of St. Louis encephalitis were reported in Polk County. Isolations were made by the Division of Health's virologists from pools of **Culex nigripalpus**, the same mosquito that was identified as the vector of the 1962 epidemic in the Tampa Bay area. If the Division of Health had not had a well-trained arbovirus research team already in operation, the identification of this arbovirus would not have been made.

Fifty-seven counties and mosquito control districts participated in the state-aid arthropod control program. Over \$8 million dollars



STOPS BREEDING—Within a few weeks after the spraying the canals are cleared, but unless the waters are sprayed with chemicals several species of mosquitoes will start to breed among the rotting plants.

of state and local funds were spent in the program during the year ending September 30, 1969. Local funds were increased and \$9.9 million was budgeted for the new fiscal year.

Brevard and Volusia were the two counties involved in the construction of new dikes with the subsequent flooding of salt marsh mosquito breeding areas. The Division of Health, along with several counties and the State Department of Natural Resources, was trying to determine the suitability of using the flooded impoundments for the rearing of shrimp, various types of mariculture, and duck and geese feeding areas. Approximately 44,000 acres were involved in this multipurpose project.

After 25 years of spraying marine grass deposits on the shores of the Gulf of Mexico with DDT to control dog flies, the use of this pesticide was discontinued and a substitute pesticide recommended by the Division of Health.

Following Hurricane Camille in August, heavy deposits of marine grass were deposited on the shores of the Gulf, and West Florida experienced the worst outbreak of dog flies in years.

Through the Reorganization Act, the former Pest Control Commission was abolished and its functions transferred to the Division of Health. A total of 795 pest control licenses and 5,062 em-

ployees identification cards were issued; and 112 homeowner complaints were investigated.

These are the Facts on ... Laboratory Services

The laboratories of the Division of Health provided diagnostic answers to many medical questions for physicians and patients throughout Florida. It also gave support to regulatory and research programs of county health departments and bureaus and sections of the Division of Health. Reference and diagnostic laboratory services were made available to physicians, hospitals, independent laboratories, medical examiners and law enforcement agencies.

Regulatory responsibilities consolidated into a comprehensive laboratory improvement program included:

- * registration of clinical laboratories and licensure of personnel;
- * approval of laboratory personnel for chemical determination of alcohol in the blood and certification of breath-testing machines in accordance with the implied consent law;
- * certification of independent clinical laboratories to the Social Security Administration;
- * approval of clinical laboratories for the performance of pre-marital and prenatal serological tests for syphilis, and
- * certification of commercial, public health, dairy and water plant laboratories for the testing of dairy products and water supplies.

A total of 2.9 million examinations was performed; this was a decrease of three per cent from 3.01 million of 1968. Increases in tuberculosis bacteriology, gonorrhea smears and cultures, PKU screening, and virology and narcotics analyses were offset by decreases in syphilis serology, enteric bacteriology, and parasitology.

The PKU Guthrie tests offered in the Miami and Jacksonville laboratories continued to rise to 65,000 tests, reflecting the promotion of this program by the Division of Health. The Guthrie test is one way of discovering a physical condition in infants that leads to mental retardation.

LABORATORY TESTS—Over 65,000 Guthrie PKU tests were performed by Division of Health laboratories in 1969. This test determines whether infants have a condition that may lead to mental retardation.





HEALTH EDUCATION—The Division of Health distributed over 312,000 pamphlets in 1969 to help educate Floridians to ways of better health. Over 18,000 visual aids were also circulated by the audio visual library.

**These are the Facts on
... Vital Records, Finances and Personnel**

Records are kept by the Division of Health for many reasons, but the most important are those vital records that tell who is born, dies, married or divorced. They are important in connection

with proof of citizenship, the right to attend school, marry, enter the Armed Forces and to draw many types of benefits. Public health officials can discover from death certificates any possible correlations of disease and death.

The Division of Health estimated Florida's population at 6.3 million as of July 1, 1969, maintaining the state's position as the ninth most populous in the nation.

The birth rate rose to 17.1 per 1,000 persons. There were 108,364 births. This was up from 1968 when the birth rate was 16.3 for each 1,000 persons; and 100,971 births were recorded.

For the 23rd successive year, deaths set a new record with 72,952 deaths. The rate was 11.5 per 1,000 population. A total of 68,710 deaths was recorded in 1968, with a death rate of 11.1.

The 10 leading causes of death were diseases of the heart; malignant neoplasms (cancer); cerebral vascular diseases (stroke); accidental deaths; influenza and pneumonia; bronchitis, emphysema and asthma; certain causes of mortality in early infancy; diabetes mellitus; cirrhosis of the liver; and arteriosclerosis.

Provisional infant deaths showed 2,448 deaths with a rate of 22.6 per 1,000 live births. There has been a steady decline since 1959.

The number of marriages was up to 65,836; and 34,600 divorces were recorded.

Expenditures for public health totaled some \$40 million. The money came in thirds from state, federal and local sources. Contributions were made to county health departments by boards of county commissioners, boards of public instruction, and municipal governments. Almost \$17 million of the total amount was distributed through the County Health Units Trust Fund.

Most of the services provided to the citizens of Florida were financed by the Trust Fund. A large portion of the services financed by the federal project grant were maternity and infant care, children and youth services, tuberculosis and venereal disease control, migrant health projects, and special family planning programs.

Public health services were brought to the people of Florida by over 3,400 employees of the Division of Health and 67 county health departments. These did not include the 775 employees of the former Tuberculosis Control Board, which was dissolved by the Reorganization Act. The staffs of the two state tuberculosis hos-

pitals and central office in Tallahassee came under the Division of Health as of July 1, 1969.

There are Additional Facts, Ma'am!

A monthly average of 12,700 persons were added to the state each month, compounding such health problems as sanitation, housing, solid waste disposal and communicable diseases.

To inform the public, the Division of Health published 12 issues of **Florida Health Notes**, gave out over 312,000 pamphlets, and loaned nearly 18,000 films and audio visual aids.

Educational programs on accidents and poison prevention were part of the work of the Division of Health. Over 69,300 persons took the Medical Self Help Training courses. An emergency medical service program was initiated in 1969 to work with the Governor's Highway Safety Commission and the federal department of transportation.

Seventeen employees from the Division of Health and county health departments took advantage of the academic training programs to earn undergraduate or graduate degrees.

The FACTS given in this issue of **Florida Health Notes** are not necessarily the most important aspect of the work of the Division of Health. The most important is often dull or routine. The work of the public health physician, dentist, nurse, sanitarian, vital statistic clerk, and dozens of other technical people goes on day after day, month after month, protecting the people of Florida from a myriad of health dangers and nuisances.

THESE ARE THE FACTS, MA'AM, ABOUT PUBLIC HEALTH IN FLORIDA.

Medical Services for Florida's Indians

A \$210,835-contract between the Division of Health and the U. S. Public Health Service provides medical services for the Seminole and Miccosukee Indians on Florida's four reservations. Due to the limited amount of money, tribal members living off the reservations are not eligible for this medical care program and many Indians do not receive adequate medical care.

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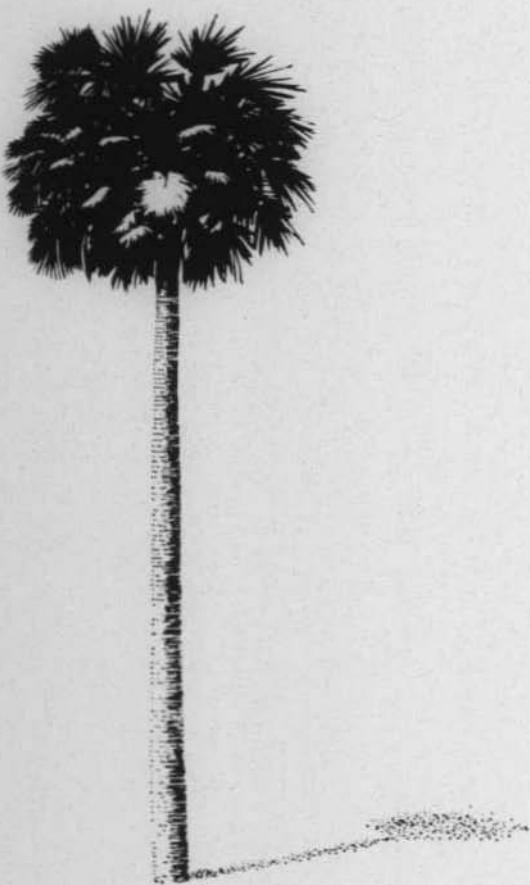
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FLORIDA HEALTH NOTES



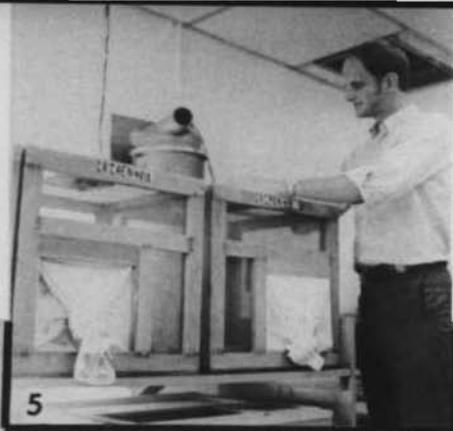
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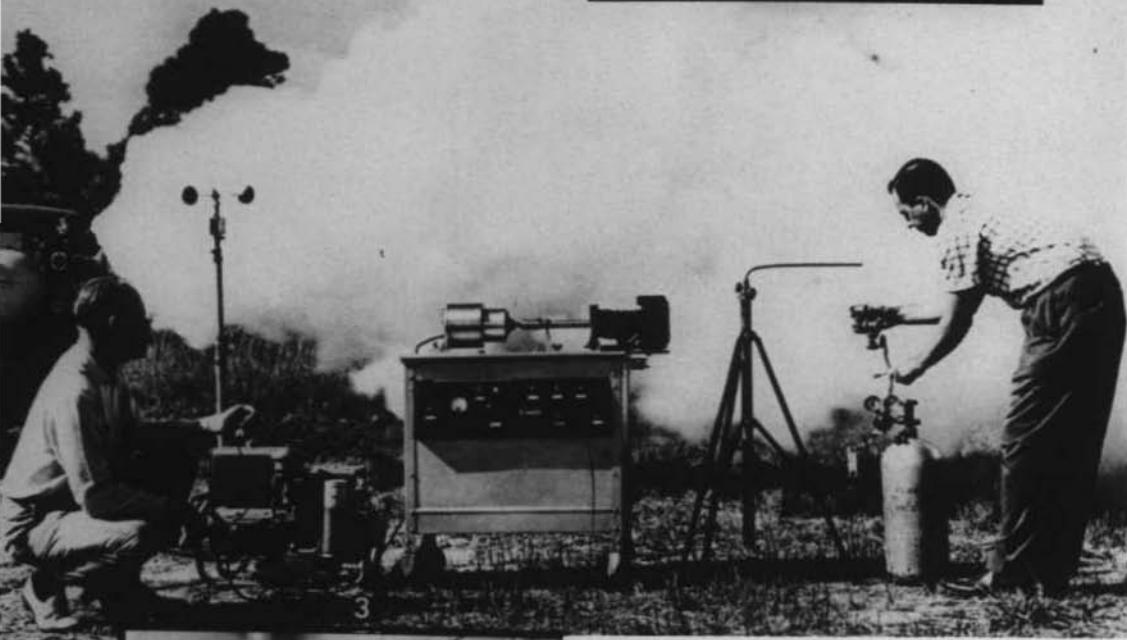
**Mosquito Control —
— Disease Prevention**
FLORIDA STATE LIBRARY



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2



1



ARTHROPOD RESEARCH LABORATORY — The West Florida Arthropod Research Laboratory carries on research in the control of mosquitoes and dog flies. The Laboratory worker (1) transfers mosquitoes from a cage to another container; (2) the effects of pesticides are tested on mosquitoes in a wind tunnel; (3) fog droplets are photographed by a special camera; (4) various types of traps are used to catch mosquitoes; and (5) the Laboratory raises and maintains its own mosquito colonies.

Mosquito Control and Disease Prevention

Mosquitoes — Why worry about them

Mr. and Mrs. Smith, who live in a Florida city and their guests each year battle mosquitoes on fishing and hunting trips, at the beach, on their patio. They swat, spray and occasionally complain to the local health department or mosquito control district which fogs the area. But Mr. and Mrs. Smith are only on swatting relationship with the pests. Their knowledge of mosquitoes is limited.

They have heard that the insects carry disease; they know that during the cooler months the mosquitoes disappear; but they don't know why control of these diseases is so important to Florida.

Mosquitoes have always plagued man and animals. They have limited man's occupation of many regions of the earth; they have a direct effect on his economy. Much of Florida would be uninhabitable if mosquitoes were not kept under control.

Sanibel Island, for example, was once so heavily infested with mosquitoes that bred in the vast grassy marshes that the local postman had to make his rounds in July dressed like an Eskimo in parka and netting. The Division of Health researchers lost some of their experimental animals to swarms of the infamous Sanibel mosquito, just as decades ago ranchers around Lake Okeechobee lost their cattle to the glades mosquito.

It is hard to find anything in favor of mosquitoes. But they have their place in nature. They serve as food for fish, birds and other insects. Because they are known to carry animal diseases, they may serve

CONTINUAL BATTLE — (cover photo) Man has continually fought the mosquito. Florida spends more than \$9 million annually on arthropod - control work.

as a natural control of some animals that become too plentiful. Rabbits introduced into Australia multiplied to the point where they were completely out of control and costing ranchers millions of dollars. A mosquito - borne virus disease was found by scientists that was a killer among rabbits. A few rabbits were inoculated and turned loose; the mosquitoes did the rest and soon the rabbits were down to a bearable number. In the sub - Artic region, mosquitoes pollinate several species of ground orchids.

Through laboratory studies of mosquitoes, scientists have learned much that can be applied to other insects.

Mosquitoes affect man's welfare by:

- * direct irritation caused by their bites;
- * transmission of diseases of man;
- * transmission of animal diseases to man; and
- * reduction of land values and real estate - due to the excessive abundance of mosquitoes.

Arthropods, of which mosquitoes are one type, carry some 75 diseases, such as malaria, yellow fever, dengue fever (called breakbone fever), and other animal parasites. Many of these diseases rage throughout sections of the world, and in some areas of Africa and South and Central America, they are especially prevalent. Many of the diseases carried by arthropods are caused by viruses and these are called "arbovirus infections."

Mosquitoes also carry the many viruses that cause encephalitis. Most of these arthropod - borne diseases circulate in the animal kingdom. Man and the larger animals, such as the horse, are accidentally involved when the virus breaks out of the cycle of insects - birds - mammals - insects - and spills over into these victims.

FLORIDA HEALTH NOTES

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FEEDING TIME — A female mosquito sucks blood from a host. It needs the protein from the blood to form its eggs.

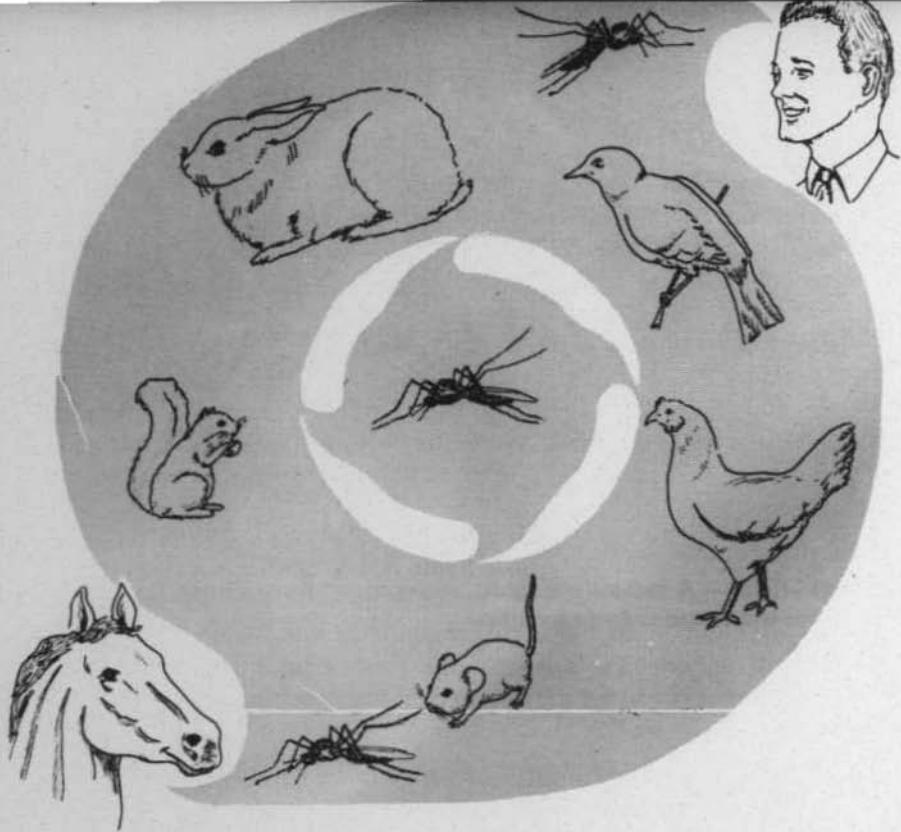
Symptoms of these encephalitides range from headache, slight temperature and tiredness in mild infections to high fever, disorientation, coma and death in the more severe which involve damage to the central nervous system. Some people recover completely; others are left with a residual of irritability and permanent brain damage.

In the past Florida has had three outbreaks of St. Louis encephalitis, one of the virus encephalitides. This issue of **Florida Health Notes** will tell you about these previous outbreaks, what the Division of Health is doing to detect any build up of the encephalitis viruses in the environment; about the control of mosquitoes that carry the disease; and how you can protect yourself from mosquitoes.

Florida — Once a Land of Swamps and Mosquitoes

The earliest explorers and settlers of Florida were well acquainted with the mosquito. They named lagoons, inlets, and even large portions of the state for the infamous insect. Orange County and several adjoining coastal counties were once all lumped into a huge "Mosquito County."

As early as 1842, the Count of Castlenau, in his "Views and Recollections of North America," described the area around Tallahassee as



THE VIRUS CYCLE — The mosquitoes which carry the encephalitis viruses normally feed on rodents, chickens and birds. These may serve as reservoirs for the disease. When men or horses are bitten by the virus carrying mosquitoes, they sometime become ill and die.

a beautiful spot marred with tragedy. He wrote, ". . . in opposition to the numerous advantages there are the greatest plagues that can afflict a new settlement . . . every year bilious fevers of a most dangerous nature spread consternation in the whole region . . . the comparative extent of the huge cemeteries is a sad warning for one who, charmed by the beauty of the site, would want to establish himself in this region."

When Congress was debating the statehood of Florida in 1845, John Randolph of Virginia rose to state that Florida could never be developed, nor would it ever be a fit place to live. He called Florida a "land of swamps, of quagmires, of frogs and alligators and mosquitoes."

In 125 years, that land of swamps, quagmires, alligators and mosquitoes has become the ninth most populous state in the nation. It is the vacationland of millions of visitors; well known for its favorable climate and pleasant living. But it was not always a delightful or easy place to live.

Early disease which swept through the state time after time were yellow fever, malaria, and dengue fever. Epidemics swept through the towns and villages every few years. In 1899, about 10 years after the old State Board of Health was created because of yellow fever epidemic, the mosquito was recognized as the vector, or carrier, of human diseases. The mosquitoes comprise the most important group of all blood-sucking insects.

Yellow fever, dengue and malaria have long disappeared from the Florida scene. The last death from yellow fever occurred in Florida in 1905; the last locally-transmitted case of malaria occurred in 1948; dengue fever passed from the state in the mid-1930's. However, these diseases still rage in many parts of the world. Because the mosquito-vectors are still here, the Division of Health is ever on the alert to identify those who pass through the state that are infected with these diseases and isolate them from the mosquitoes. In recent years, some of the servicemen returning from Vietnam have malaria and the Division of Health goes to great length to keep these men from the mosquitoes.

A Present Concern — the Encephalitis Viruses

Some one said that as soon as you get one public health problem conquered another rises in its place. Such is the way with diseases carried by mosquitoes. Once yellow fever, dengue fever and malaria were chief public health concern; now the virus encephalitides are of primary importance. These viruses attack the brain, spinal cord, and the membranes surrounding the brain. At the present time there are no vaccines generally available to prevent arthropod-borne encephalitis in humans — as there are for horses; there is no treatment once the disease has been contracted.

St. Louis encephalitis was first reported in the city of that name in 1933. It was first detected in Florida in 1952; and in 1959 and 1961 small outbreaks were experienced in the Tampa Bay area. A larger outbreak occurred in the same area in 1962 when 222 cases were confirmed by laboratory means. There were 43 deaths, mostly in middle-aged and

elderly persons. While one species of mosquito, **Culex pipiens-quinquefasciatus**, was the vector of the disease in St. Louis, another species, **Culex nigripalpus**, a tropical mosquito, was found to be infected with the virus and in great numbers in the Tampa Bay area.

The virus then was undetected until 1968 when it was isolated from **Culex nigripalpus** mosquitoes collected in Dade County. The first human case since 1962 occurred in Polk County when a woman was diagnosed by public health laboratories as having St. Louis encephalitis. Two other women were presumed to have had the virus although all of the laboratory tests did not confirm the diagnoses. Three pools of mosquitoes trapped in the Polk County area where the woman lived were found to be positive for St. Louis encephalitis virus. Evidence that the virus had been in the environment was also found in chickens, birds and wild animals in several Florida counties.

Eastern equine encephalitis had long been known as a serious disease that caused "blind staggers" in horses. Although a vaccine has been developed for horses, many deaths are reported by veterinarians to the Division of Health each year. The virus also attacks game birds, particularly pheasants and chukars — a type of partridge. When the disease occurs in humans, Eastern encephalitis is fatal about 60 per cent of the time, and in the remaining cases there is severe brain damage. Two children were victims of the Eastern virus during 1969 — one of the children died; the second was left with a serious residual.

The Venezuelan equine encephalitis virus has recently been found to occur in Florida and appears to circulate among mosquitoes and small rodents in the Everglades. In the South American country of Venezuela, between 1950 and 1960, the virus nearly wrecked the nation's economy by killing 90 percent of the burros. In 1969, two human cases were reported in Florida — one in Homestead and one at Sebastian. Evidence has been found in rodents as far north as Indian River County.

Another mosquito-borne encephalitis is caused by California virus, which has recognized first in Florida in 1963 and detected last year in a visitor from Georgia. Western equine encephalitis, which has been found occasionally in Florida since 1960, is rarely seen in the eastern half of the United States. On the Great Plains and in the Far West, the virus causes a great deal of sickness in horses.

CAGED MOSQUITOES

— One of the ways of getting to know mosquitoes is to raise them in the laboratories.



Getting to Know the Mosquito

Little was known about the St. Louis encephalitis vector prior to 1962. The mosquito, **Culex nigripalpus**, was considered to be of little importance — either as a pest or carrier of disease. Because of the lack of knowledge about the arthropod borne encephalitides and their vectors, the Epidemiological Research Center (formerly called the Encephalitis Research Center) was set up in the Tampa Bay area to study the many questions which rose out of the epidemics. A few questions were:

- * Where do the viruses come from?
- * How do the viruses survive from year to year?
- * Are they brought into the state by migrating birds?
- * Do birds or animals serve as the reservoirs?

Some answers have been found but there are still many questions unanswered.

In order to carry the virus from one bird or mammal to another, the insect must bite the host when the blood of the host contains the active virus. This condition, called viremia, may last only a few days. The virus goes into the gut of the mosquito as it obtains its blood meal which is necessary for the production of eggs. The virus from the gut of the mosquito passes through the wall of the stomach and eventually enters the salivary glands of the mosquito where it continues to multiply during the entire life of the mosquito. When this infected mosquito takes its next blood meal it passes the virus to the mammal or bird on which it is feeding.

While **Culex nigripalpus** has been the carrier of St. Louis encephalitis thus far in Florida, public health officials feel that **Culex quinquefasciatus** could become a vector in Northwest Florida, and **Culex bahamensis** could be a carrier in the Florida Keys. **Culex quinquefasciatus**, often called the "Southern household mosquito," breeds in stagnant or polluted water in trash, cans, rubber tires, and in effluent from sewage treatment plants.

The life cycle, feeding and breeding habits, migratory patterns and other habits of mosquitoes vary from specie to specie. **Culex nigripalpus** lays her eggs in "rafts" on the surface of water of ditches, swamps and grassy ponds where there is rotting vegetation. The mosquito will hold her eggs until conditions are right for laying. While she seldom lays her eggs in artificial containers, the larvae of the specie in Dade County were nevertheless found in 37 different classes of containers.

Much is known of the eggs, larval and pupae stages of mosquitoes. After they emerge as adults less is known of their habits. All mosquitoes, including females, drink nectar, changing it into sugar to be used for flight energy. During the daylight hours, **Culex nigripalpus**

IDENTIFYING MOSQUITOES — A laboratory technician, working on a specially-built refrigeration table, separates the mosquitoes by species. The insects are kept cool to keep the virus, if it is in the mosquito, alive.



needs dark places with high humidity and temperatures to hide. She rests close to the ground or even in ground litter or debris. If the day is hot and dry, the mosquito will penetrate deeper into the debris to seek a damp, dark resting place. **Culex nigripalpus** is more active during Florida's rainy season when humidity is normally higher in the evening.

Only the female mosquito bites. She is equipped to do her task with a pair of cutting tools, the mandible and the maxillae. After making the incision, the mosquito inserts two organs, the hypopharynx and labrum-epipharynx, which are pressed together to make her drinking tube. When she bites, she injects a secretion from her salivary glands to keep the blood from coagulating in her drinking tube. If she has the virus, it is also injected into the body of the victim.

Culex nigripalpus is a nocturnal mosquito. However, if a man or other potential victim passes close to her resting place during the day, she may fly out and bite. She is especially active after sunset and before dawn. Studies have shown that the feeding habits of the mosquito vary with the seasons. In rural and less populated areas, the insect feeds on birds during the winter and spring months; and on mammals, preferably cattle, during the summer and autumn. Man is a substitute for the usual source of blood.

Footprints of the Virus

When St. Louis and other encephalitis viruses have been in a bird or animal, they leave their "footprints." The body of the warm-blooded animal that has been infected puts up a defense against the virus. This produces a change in the blood factor (gamma globulin) called antibodies. The infection in animals and man may last only a few days but the antibodies remain. A vaccine will also produce similar antibodies.

When samples of bloods are tested in the laboratory, these antibodies show up. Serially collected specimens frequently show a rise or fall in titer thus indicating that the animal or man from whom the blood was taken has been infected.

Surveillance — The Search for the Virus

The Division of Health, through its veterinarians, entomologists, biologists and technicians at the central headquarters and the Epi-

SQUAWKING BLUE JAY—The Division of Health's surveillance work includes the netting of wild birds. The birds' bloods are sampled and then they are released.



demiological Research Center in Tampa, has carried on a statewide surveillance program since 1962 to try and detect the St. Louis virus before it becomes widespread. Because the other encephalitis viruses are part of the picture, they are also identified. The other viruses are becoming important, due to the spill over into man.

In the search for the virus, or its footprint, the Division of Health's staff members sample the blood of wild birds and mammals, trap mosquitoes, and put out sentinel flocks chickens in populated areas, especially where there are older folks who are affected more severely by St. Louis encephalitis.

The areas selected for sentinel chicken flocks must also have terrain that will support various types of mosquito breeding, especially those known to be vectors of St. Louis encephalitis. The flocks of 15 young chickens are kept by local residents. The Division of Health furnishes wire for a fence, water pan, silo-type feeder and identifying wing bands. The resident builds a simple fence and roost under a cover, but not a chicken coop, so that the chickens will be out where the mosquitoes will bite them.

Samples of the chickens' bloods are taken before the sentinel flocks are put out in early spring. The chickens are then bled every two to three weeks throughout the mosquito season — late October — or later, depending on whether the encephalitis virus is found in the area. If an infected mosquito bites a chicken after the last bleeding, antibodies will

show up in the next blood specimen. Virologists will then know that the mosquitoes in the area have acquired the virus within a given period.

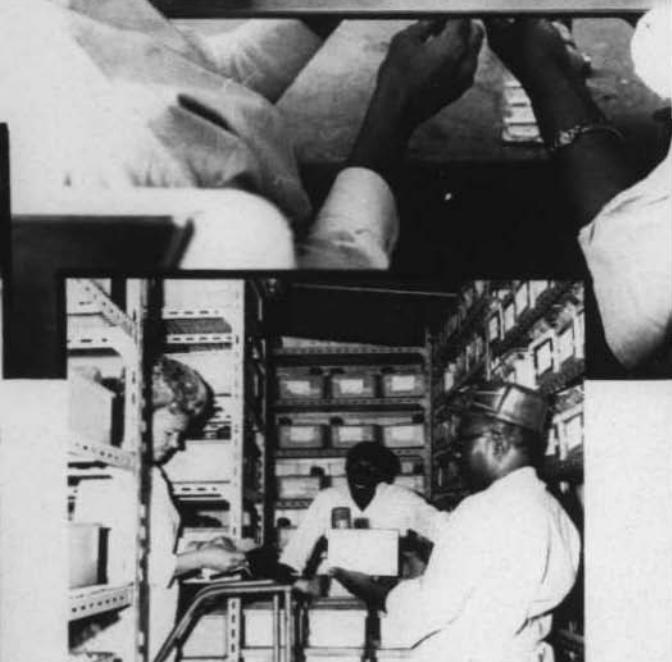
Biologists and technicians from the Division of Health also sample the blood of chickens from backyard flocks of Florida residents who live in areas where there may be mosquito breeding. The staff members try to obtain from the owners the age of the chicken so they can make judgments whether antibodies, if they show up, were of recent infection.

Flocks of doves; wild mammals, such as cotton rats, raccoons and opossums; and horses and dogs are bled and samples of blood sent to the laboratories in Jacksonville and research center in Tampa. The Division of Health also has a program to urge physicians to send in paired sera, blood specimens for diagnostic study from any suspected case of human encephalitis, aseptic meningitis, or fever of unknown origin. Sometimes the laboratory has difficulty in obtaining the necessary second specimen and the Epidemiological Research Center or health department sends out a public health nurse who obtains a history of the case from the physician or patient, and will, if requested by the physician, take the specimen of blood.

County health department directors and physicians are advised to report to the Division of Health's state epidemiologists immediately any suspected viral encephalitis human case or death. Veterinarians are urged to report any cases where horses are diagnosed as having Eastern encephalitis. This information is sent to the administrator of the Veterinary Public Health Section of the Division of Health.

BACKYARD CHICKEN FLOCKS—A Division of Health worker samples the blood of a chicken from a backyard flock. This is part of the surveillance program for the encephalitis viruses.







VIROLOGY — The work of identifying the encephalitis virus is extensive. (1) the work includes mountains of paperwork. (2 & 3) The primary step in the laboratory mosquito processing is the grinding of the pooled mosquitoes by mortar and pestle. (4) An extensive colony of laboratory animals is used in the virology laboratory. (5) Materials from mosquito pools and/or human specimens are inoculated into a living host system. (6) A specimen or serum is pipetted from a glass vial. (7 & 8) Specimens are diluted and treated by various means. (9) Suspended material from mosquito or human specimens is inoculated into tissue cultures.

The Epidemiological Research Center, while searching for incidence of the virus and trapping, bleeding, ear-tagging and releasing animals in the Fletcher area of Hillsborough County, caught a raccoon three times:

HUMAN SPECIMENS

— A public health nurse checks specimens from patients suffering from fevers of unknown origin or suspected cases of human encephalitis into the Epidemiological Research Center.



- * the first time the blood specimen showed no antibodies;
- * the second time, three days later, St. Louis virus was isolated from the blood specimen; and
- * the third time, seven days later, antibodies were detected in the blood.

The biologist at the Research Center believed the reason the raccoon was caught so many times was that the water table in the area was high and the only food available was in the trap.

Identifying the Virus

As previously stated the bloods of birds, animals and humans merely show the footprints of the encephalitis virus. Each of the viruses produces a different antibody or footprint. The mosquito is the one major way of finding the virus. Should the blood specimen of an animal or bird be taken during the few days that the virus is active in the blood stream, the virus will be found, as it was in the raccoon. However, procedures for recovering the virus from the blood stream are difficult and complicated. In some respects, its like looking for a needle in a haystack.

The public health laboratories are an important part of the team that protects the citizens of Florida and their visitors from encephalitis.

Without the laboratories, there would be no way of finding and identifying the virus.

The virology laboratory at Jacksonville examines some 500 chickens, cotton rats, birds and animals bloods each week for the viruses. During the peak mosquito-breeding season, it may run some 1,000 specimens during a week's time.

The testing of mosquito pools is also seasonal. The laboratory usually pools 50 to 75 mosquitoes of one species in a batch and run about 25 pools a week. During the mosquito-breeding season, it may examine up to 100 pools a week.

Sera and tissue specimens are examined from an average of 20 human patients a week with 100 specimens being tested during the peak of the season. The specimens, which are sent in by county health departments and physicians, are put through a battery of 10 tests. They are from patients who have fevers of unknown origin or are suspected of having a viral disease.

The isolation of the virus is a time-consuming and costly procedure. Mosquito pools and/or human tissues are inoculated into a host system. If and when the host is affected, the material which now contains the virus is removed and reinoculated into another host system. It is from this host that a presumptive identification of the virus can be made. Additional weeks are necessary before the identification can be made positive.

The Epidemiological Research Center, in order to demonstrate the presence of virus in mosquitoes, has developed a system of grinding up a thousand mosquitoes from one area into a batch (pool), injecting a small quantity of the material into very young chickens and then testing the blood of these chickens 10 days later for the "footprint" of the virus. If the chickens develop antibodies against St. Louis encephalitis virus, the Center's epidemiologists know that the virus was present in the particular area in which the mosquitoes were trapped. The purpose of the large pool of mosquitoes is to cut costs and to test a greater number of mosquitoes in a shorter period of time, thus enabling the beginning of increased mosquito control measures sooner.

The virology unit of the Division of Health laboratories is one of the most expensive to operate in the laboratory system. For each dollar spent in collecting and shipping of specimens to the laboratory, the

Division of Health spends an average of \$8 to test the specimen. The unit maintains a special colony of inbred laboratory mice that are susceptible to virus disease. These mice are not germ free, but are kept in a state of good health.

Personnel for the virology unit require special training and laboratory equipment to handle the virus isolations. Because of the large numbers of specimens submitted for testing, automation techniques are used in testing blood specimens for antibodies.

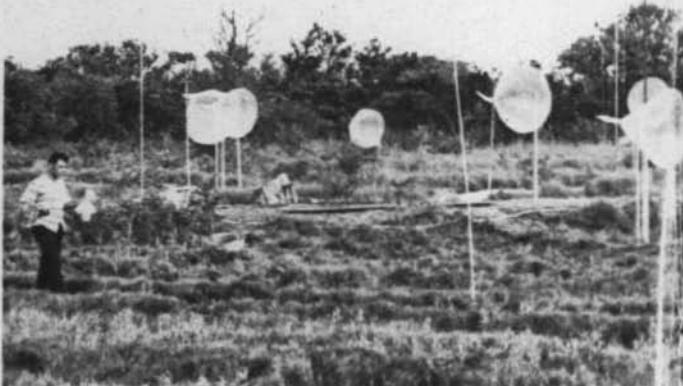
When the Encephalitis Virus is Found

When the encephalitis virus is isolated from mosquitoes — or there are human cases of confirmed arbovirus infections, the surveillance team, the mosquito control districts, and the county health departments involved in arthropod control work step up their activities above the normal operations.

Epidemiologists investigate the suspected human cases of arbovirus infections to determine the possible source of infection and urge the prompt submission of additional specimens for definite diagnoses.

The collecting of mosquitoes is stepped up in the vicinity where the pool of infected mosquitoes was found or where the infected person lives. Blood specimens are taken from wild and domestic animals. Wild birds are netted and bled. Sentinel chicken flocks are set out and bled periodically. All animal and tissue specimens and mosquitoes are given high priority for testing in the laboratory schedule.

**MOSQUITO
RESEARCH — Staff**
members of the Entomological Research Center prepare to release a flight of mosquitoes. The cone-shaped nets are used to test the flying and dispersal habits of the insects.

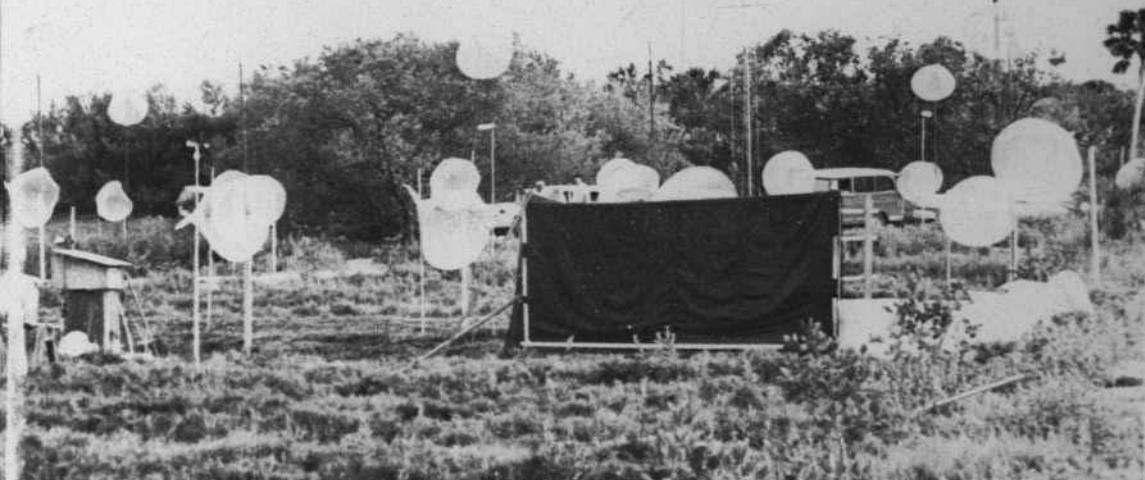


Because of the isolations of St. Louis encephalitis virus in 1969, the Division of Health, county health departments and mosquito control districts are ready to carry out an attack on mosquitoes in 1970. However, overwhelming numbers of infected mosquitoes are needed before the virus spills over into the human population. Both in 1962 and 1969, there were large numbers of **Culex nigripalpus** in the environment. In 1962 there were also great number of doves and other birds around residential areas of the Tampa Bay area. Florida had a high water table in 1969, but until the rainy season began, there was a low production of mosquitoes in nature. A severe winter, both in 1962 and 1969, ended the **Culex nigripalpus** breeding season.

Controlling the Mosquito

The first organized effort to control mosquitoes took place in Taylor County in 1919 when malaria control project was initiated. The first law on mosquito control was passed by the State Legislature in 1925 and the first mosquito control district was established the same year in Indian River County.

The first state aid law was passed in 1949. A second state law was passed in 1953 whereby boards of county commissioners or mosquito control districts that placed funds in their budgets for the control of "arthropods of public health importance" could receive assistance from the state. This law also made money available for construction of the laboratory at Vero Beach.



Budgets for the control of arthropods of public health importance have grown until in 1969, 57 county health departments and/or mosquito control districts set aside over \$8.3 million for mosquito control work. The state government added an additional \$1.6 million.

There are two types of mosquito control:

*temporary - which involves the spraying of breeding places where the immature insects are found; and the fogging of residential areas to kill biting adult mosquitoes.

*permanent - the elimination of breeding places, or the making of breeding places accessible to predators (mainly fish) of mosquito larvae.

Temporary Control

Various species of mosquitoes breed in different places. Two of the pest mosquitoes, **Aedes taeniorhynchus** and **Aedes sollicitans** breed in salt marsh and mangrove swamps; the yellow fever mosquito, **Aedes aegypti**, breeds in artificial containers around people's homes; other species breed in fresh water swamps, borrow pits, flooded fields and air plants and tree holes - even in land-crab holes.

At one time, DDT was used as a control of mosquitoes in an undiscriminating manner. During World War II, military installations and local mosquito control districts used the chemical to spray large areas of the state to combat salt marsh mosquitoes. This killed off only the susceptible mosquitoes, so the generations that followed were resistant to DDT. Because of this, the insecticide has not been used in Florida for mosquito control for many years.

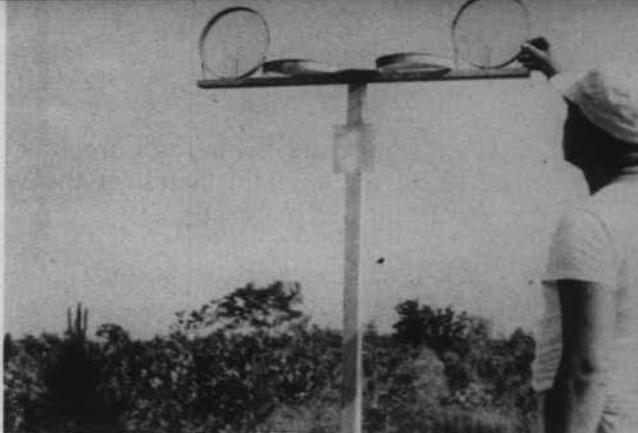
Twenty years ago, the Division of Health entomologists saw the danger of resistance from using the same chemicals for both larvicing and adulticiding and recommended that different kinds of pesticides be used for the separate operations.

Since 1865, Paris green has been used as a pesticide for many insects. In 1956, the Division of Health developed a new way of using this chemical as a mosquito larvicide. Now Paris green, along with diesel oil, are the two leading larvicides used in Florida.

Paris green is effective against many, but not all, species of mosquito larvae. It kills mosquitoes only when ingested. Because mosquitoes, as pupae, do not feed, it is necessary to apply the arsenic compound before the mosquito larvae reach the pupal state. Granules of

TESTING CHEMICALS

— A worker from the West Florida Arthropod Research Laboratory places cages of mosquitoes above the ground in preparation for the testing of chemical fogs and sprays.



Paris green and vermiculite are applied in a five per cent formula in quantities of about 15 to 20 pounds per acre. When applied to small areas, the chemicals are distributed by hand casting, by hand seeders, or by bellows - type dusters. Airplanes are used to treat large or inaccessible areas.

Undiluted diesel oil is used at a rate of 10 to 20 gallons per acre. Some mosquito control operators add a spreading agent and then the mixture is applied at the rate of five or six gallons per acre. The oil is spread by ground or hand sprayers over small areas.

Where permanent control or larvicide is not adequate to do a complete control job, other methods are necessary to control adult mosquitoes.

Fogging by ground equipment is one of the most effective methods of killing adult mosquitoes. It has the advantage of low volume of chemical per acre and long drift of small droplets in swaths 300 to 600 feet wide. This especially is effective in urban areas where street spacing is a limited factor. Larger droplets of sprayers and blowers do not give adequate control under most urban conditions, because the fog does not drift far enough from the point of application.

Several chemicals (Dibrom, malathion and baytex) are used. The insecticides is combined with diesel oil and a sludge inhibitor to make the fogging formula. When properly applied, the fog does not leave residual deposits on vegetation and buildings. Because day time winds and thermal currents from soil and pavements cause the small aerosol-size droplets to rise rapidly and evaporate, fogging should be done only at night. Mosquitoes also rest at ground level in leaf litter during

daylight hours and the aerosol droplets do not reach them. Therefore, fogging during daylight hours for the control of adult mosquitoes is a waste of time and materials.

When wind velocity, atmospheric temperature, and truck speed are considered, the fogging operations can be quite effective.

Airplanes are used to spray densely wooded and brush areas, hardwood forests and swamp where adult mosquitoes may be difficult to reach with fogging trucks. However, tests have determined that fogging for adult mosquitoes by airplane gives poorer results in areas where most mosquitoes are protected by trees and vegetation.

Only insecticides which have been proven safe for humans by governmental, university and manufacturer laboratories, are accepted for research. The West Florida Arthropod Research Laboratory seeks to find the correct dosage necessary to kill mosquitoes. To do this it first uses a small wind tunnel in which a cage of mosquitoes has been placed. The chemicals, when properly applied, are not harmful to humans, wild life or vegetation.

Field tests are carried out by placing cages of mosquitoes at various levels and applying fogs of chemicals from trucks or sprays from airplanes. Called "space treatment," the proper fogging techniques give out aerosol droplets that drift long distances and might evaporate before landing. The mosquito is killed when the droplets land mostly on its wings. This is another reason why fogs should be applied only at night when mosquitoes are active.

Control by Water Management

The most effective way of controlling mosquitoes is by water management, which includes draining, flooding and filling. These methods eliminate or modify the conditions of wet lands that favor mosquito breeding. The method selected for a particular location is determined by the habits of the mosquitoes to be controlled and by such environmental factors as tides and ground elevation.

Salt marsh mosquitoes lay their eggs only on the moist soil above the tidal line. The eggs later hatch when flooded by rains or higher tides. To eliminate these areas as breeding places, the marshes can be diked to keep them flooded. Thousands of acres of salt marsh on the East Coast of Florida have been impounded in recent years.



WATER MANAGEMENT — The impounding of marshes by dikes (right) is one way of controlling mosquito breeding. When water is low inside the impoundment, the level is regulated by pumping in more water. (left).

Impoundments play an important place in maintaining other forms of life. Shrimp, crabs, commercial and game fish and many kinds of birds are dependent on intertidal marshes as nurseries or homes.

The flooded marshes can maintain several species of minnows that feed on mosquito larvae and pupae. Canals inside the dikes can provide waters for the fish to live in should the marsh bottoms become dry.

Birds also respond to impounded waters. Ducks, geese, pelicans, herons, rosy spoonbills and ibis are commonly found in areas where salt marshes have been diked and flooded. Low areas of Sanibel Island, Bush Key, and Merritt Island National Wildlife Refuge, just to name three places that once bred vast hordes of mosquitoes, have been diked and flooded and are now successful as bird sanctuaries.

High spring tides occur during the summer months on the West Coast of Florida; therefore, ditching that facilitates tidal flushing and permits mosquito - eating fish to penetrate the marshes is the principal water management method used in that part of Florida.

Drainage of swamps and ponds eliminates source of fresh water mosquitoes at inland sites where higher elevations make this method feasible.

Studies of Mosquito Biology

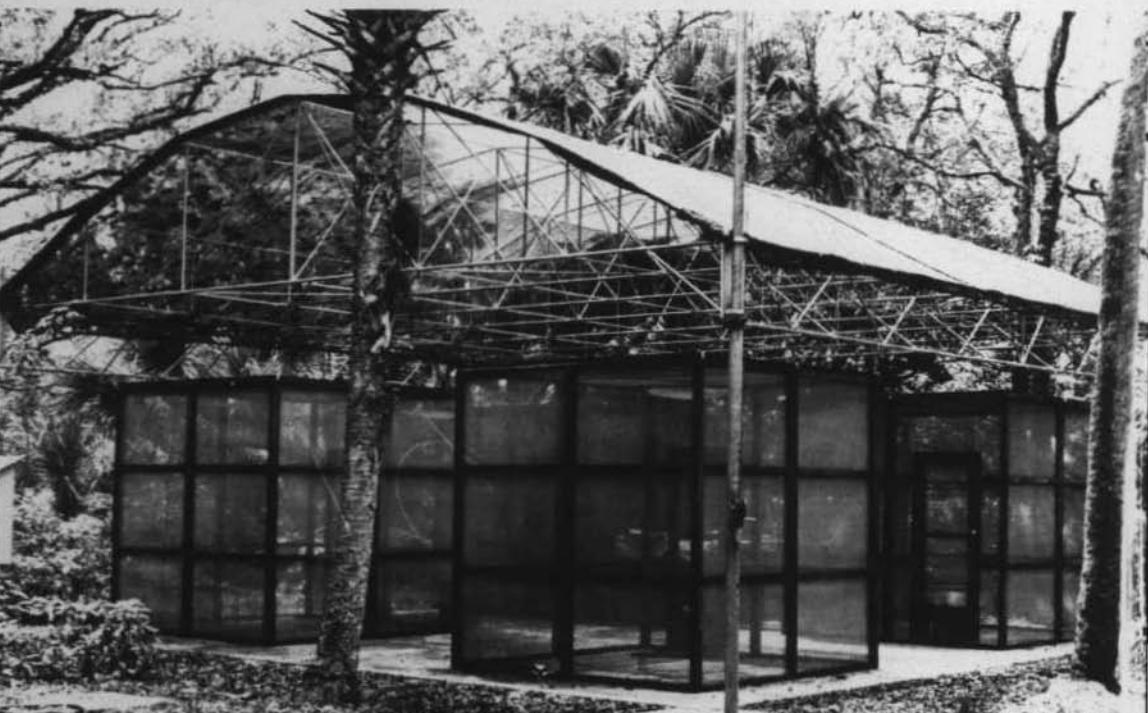
The Division of Health's Entomological Research Center at Vero Beach, is noted universally for its works with the life cycles of several mosquito species, especially **Culex nigripalpus** and the salt marsh mosquito, **Aedes teaniorhynchus**. Their breeding, biting, mating and feeding habits; their reproduction, growth and dispersal have come under close scrutiny. One recent study involved the release of a half-million marked **Culex nigripalpus** to find out something about mating habits of the female mosquitoes. To provide the mosquitoes for their experiments, all of the research centers and laboratories of the Division of Health raise colonies of the mosquitoes under study.

Some Unanswered Questions

Although the Division of Health's scientists have learned a great deal about the encephalitides, especially the one caused by St. Louis virus, and the mosquito that carries it, there are many blank spots in the picture.

We have the means of isolating and identifying the viruses. We are familiar with the vectors of the disease, their breeding habits and how to control them to a certain extent. At the present time, it is impossible to

BIRD HOUSE — The Entomological Research Center's bird house is used to study the feeding habits of mosquitoes on wild birds.



completely control **Culex nigripalpus** breeding in roadside ditches, swampy places and other spots where water collects and stands. Housing developments built closer to swamps, flatwoods and areas with high water tables bring man closer to mosquito breeding places. His great humanitarian gesture of feeding birds builds up unnaturally large bird populations in urban areas.

Scientists do not know how the virus got to Florida during past epidemics. Nor do they know why it did not show up between 1962 and 1968 despite the tremendous efforts to find it. Because Florida is on the eastern flyway of migratory birds, theories have been advanced that the virus was brought into the state by migrating birds from Central and South America or the islands of the Caribbean. Some people believe that the virus may live through the cooler months in a mosquito - bird - mammel - mosquito cycle in the Everglades where new generations of susceptible warm - blooded animals are constantly emerging. Perhaps it may also live in cold - blooded animals, such as snakes and frogs.

Another theory is that the St. Louis virus, when it is introduced into an area, first starts multiplying in the environment and needs time to build up in nature. When the humid, rainy season begins, the **Culex nigripalpus** mosquitoes start to multiply, and become infected with the St. Louis virus from an available reservoir. When a large enough number of mosquitoes are infected, the virus spills over into the human population. If scientists could find the bird or animal reservoir where the mosquito gets the virus initially; they may be able to break the encephalitis cycle.

If Mosquitoes Bug You — Fight Back

We have said that there is no readily available vaccine to prevent encephalitis; and there is no treatment once you have it.

While older people have a marked susceptibility to St. Louis encephalitis, the virus causes a milder disease in younger people. With the elderly, the mortality averages one in three; survivors have neurological or emotional symptoms for two or three years following the illness. The disease may trigger some deterioration of the central nervous system in the elderly person; or it may intensify and hasten the aging process.

The Division of Health, through research, surveillance and laboratory work, is trying to detect the virus as soon as it appears in the environment. The mosquito control districts and county health departments are doing their best to prevent and control mosquito breeding by fogging and spraying to kill mosquitoes.

But there is something you, the reader, can do to protect yourself;

*Screen your home to keep out mosquitoes and other insects.

*Remove anything around your home that holds water.

*Keep clean such receptacles as bird baths and boats parked on your property.

*Don't go near swamps where many species of mosquitoes breed.

*If you go hunting, fishing, or if you sit on your patio in the evening, use one of the commercial repellents that are on the market, wear protective clothing, and use garden sprays and chemical burners to keep away mosquitoes.

*If you live near a swamp or have mosquitoes around, don't attract birds by feeding.



BABY OPOSSUM —

Animals are trapped and maintained at the Epidemiological Research Center for studies of mosquito feeding and the spread of encephalitis.

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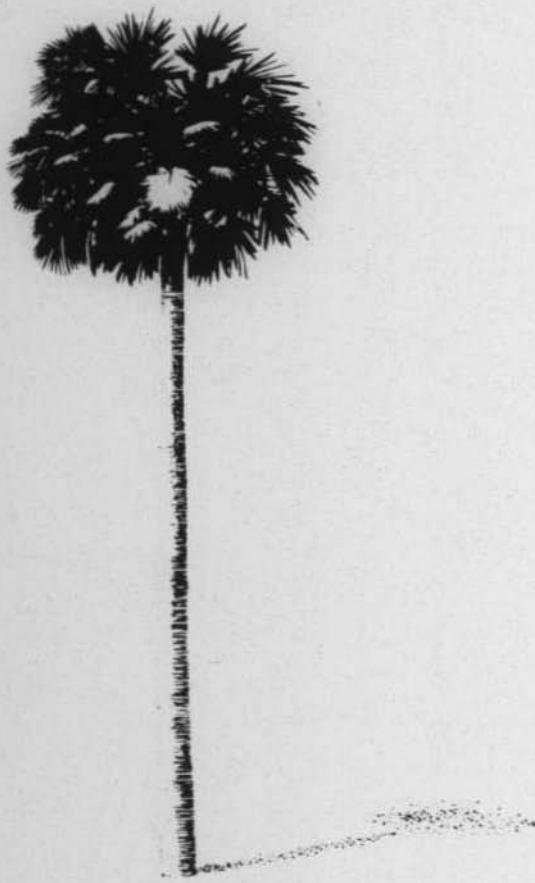
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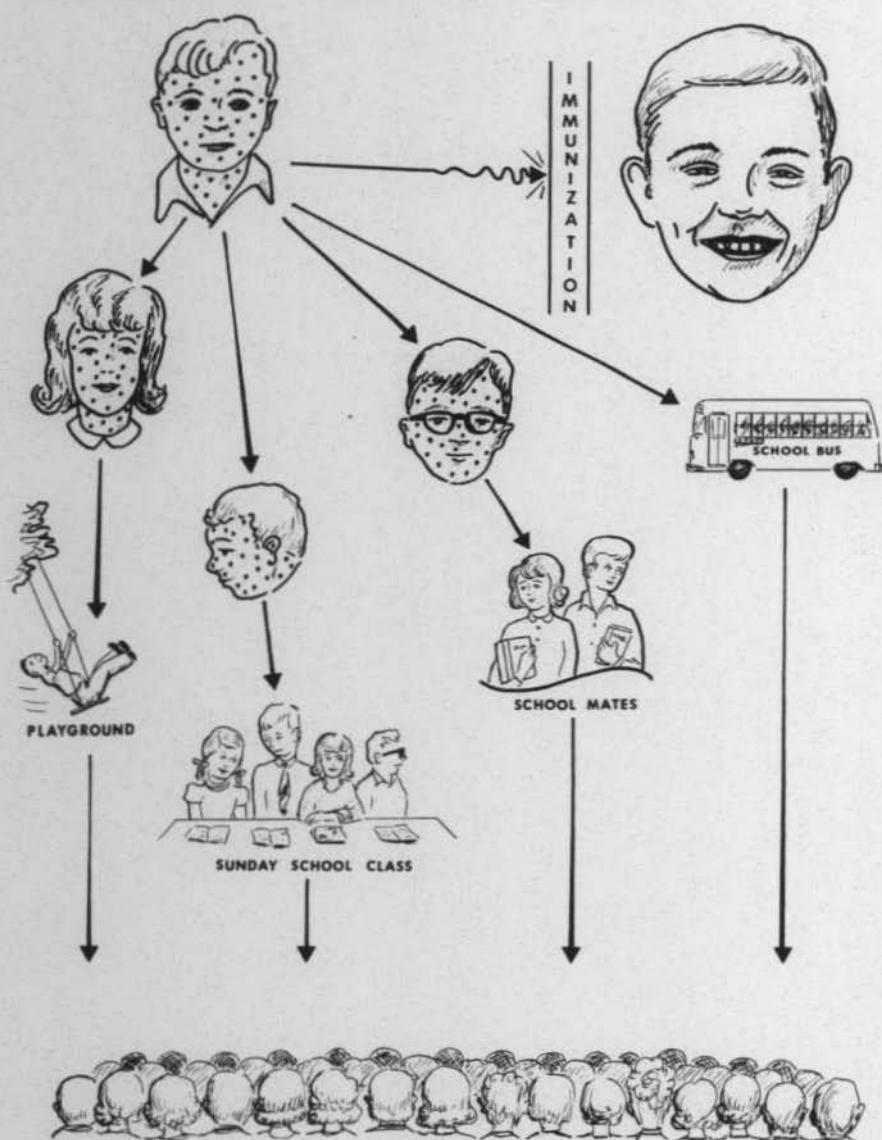
**Florida's
Immunization Program**

FLORIDA STATE LIBRARY

NOT FEELING WELL (Cover photo)

— Willie has the measles and was sick enough to go to bed. However, he had exposed other children for several days before he became sick.

MEASLES--- chain of infection



PROTECTION — Willie exposed his friends to the measles. One boy did not come down with the disease because he was immunized. Willie's playmates, however, passed the measles on to other children and adults. Some had complications and life-long side effects.

FLORIDA'S Immunization Program

The Case of the Half-Empty School Bus

Eighty-five children ride the school bus with Willie Jones to the Elm Valley Hills Elementary School. Willie is an active youngster. He likes baseball, bicycle riding, swimming, and all kinds of pets. Like most eight-year-old boys he dislikes girls - although he frequently teases them with frogs and snakes.

One weekend, Willie, his sister and parents went to visit his Aunt Belle in another Florida city. While visiting his aunt and her family, Willie had a good time. He spent much of the visit playing with his cousin. They went to a professional baseball game and the beach; they wrestled and rough-housed around the backyard. When Sunday evening came, Willie was a tired but happy little boy.

About a week after returning from Aunt Belle's, Willie developed the sniffles and his mother thought he was coming down with a cold. But she did not keep him home from school.

When he developed a dusky-red, blotchy rash, his mother decided that Willie had the measles and kept him at home. But Willie had already exposed the children on the school bus, at school and in the neighborhood. Two weeks later, other unimmunized children on the school bus who had been in close contact with Willie started coming down with the measles. For more than a week, the school bus went to the Elm Valley Hills Elementary School with only half its normal number of children.

May, Billy, and Jimmy - close friends of Willie's whom he had exposed to the measles - visited relatives and friends in other neighborhoods and cities and exposed additional children and adults. Many youngsters and several adults became ill. A few developed ear infections as a complication. One child had to be hospitalized with pneumonia; another developed encephalitis and now shows signs of

mental retardation. All of this sickness could have been avoided if Willie had been immunized against the measles. His parents love Willie, but they thought childhood diseases were something that everyone went through. They had had the diseases themselves and considered the diseases "harmless."

This issue of **Florida Health Notes** will tell you about diseases that can be prevented by vaccines and the importance of having children immunized. We will tell you about the Division of Health's Infant Immunization Surveillance Program that is carried on through its partners in health, the county health departments, and how you can and should get your children immunized against these childhood diseases that can cripple or kill.

The Diseases

Many of these diseases are called "harmless" childhood diseases. Nearly 90 per cent of all adults have gone through one or more of them in childhood -- and survived. But the Division of Health does not consider these diseases harmless. Complications, such as loss of hearing, blindness, brain damage, mental retardation, or death, are secondary results that occur much too frequently.

Some diseases, such as measles, whooping cough, smallpox and diphtheria are transmitted directly from one person to another. Others, such as rabies and leptospirosis, are transmitted from animals to man. And some, such as tetanus, can enter the body from the soil through a wound, cut or sore. These are usually "lumped" into one category called communicable diseases. Other diseases are transmitted by mosquitos, foods and many other ways. Man has many ways of becoming ill.

Some diseases can be prevented by vaccines. Before vaccines were developed, some of these communicable diseases recurred every few years - usually when there were new groups of susceptible children. However, with the development of vaccines, some of these diseases can be eradicated.

FLORIDA HEALTH NOTES

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HALF-EMPTY SCHOOL BUS — Many unimmunized children miss several days of school each year because of measles — a disease that can be prevented by measles vaccine.



The following diseases are preventable by vaccines available from your private physician or the county health department.

WHOOPING COUGH (Pertussis) - This disease is a potential killer among very young children, especially those under six months of age. More than one-fifth of Florida's infants under 18 months of age are not fully immunized despite a vaccine in use since 1938. Over the last 10 years, an average of 300 cases a year have been reported in Florida with a few cases resulting in death.

DIPHTHERIA - A vaccine has been available since 1923, but there has been an average of 30 diphtheria cases annually in Florida over the last 10 years. A small outbreak in 1969 resulted in four deaths. According to current reports from county health departments, some 20 per cent of Florida's infants under 18 months of age are not fully immunized.

MUMPS - Despite the availability of a vaccine, over 1,690 cases of mumps were reported in Florida in 1969. This is perhaps only a fraction of those persons who contracted the disease because many cases are not reported. This disease can cause sterility in adult males. Mumps vaccine is not currently available from county health departments.

MEASLES - Since a vaccine for this disease became available in 1963, a massive campaign has been waged against this disease. Still there were some 630 cases reported in all of Florida in 1969, nearly half of them in the Jacksonville area. As of June 1970, there were more than

1,200 cases reported in the Sunshine State since the first of the year. This rise in cases has come about because in some counties there has been no reduction in the number of susceptible children, despite the availability of vaccine, and sometimes there have been poorly applied programs to immunize the new one-year-old infants coming into the population. However, many cases of measles, as with mumps, are not attended by physicians and are not reported to county health departments. Thousands of children in the United States develop measles encephalitis (about one out of 600 in Florida) and hundreds become mentally retarded. Measles is not a "harmless" disease, as people frequently think.

GERMAN MEASLES (Rubella) - Over 2,100 cases were reported in Florida during 1969; during the first six months of 1970, some 2,930 cases were reported. Many more were probably never reported nor seen by physicians. During the 1964 rubella epidemic, the disease caused an estimated 600 children to be born with birth defects and an additional 900 pregnancies to end in abortions or still births. Logically it would seem the mothers would be the ones to be immunized. But the vaccine may cause a reaction in adult females. Therefore to reduce the danger and side effects in women, it is more practical to immunize school-children who may bring the disease home and infect the mothers. The vaccine causes no side effects or reaction in children.

TETANUS (Lockjaw) - Although this disease is not a communicable disease as such, it is a killer of children and adults. Tetanus is 100 per cent preventable. An average of 25 cases have been reported in Florida every year between 1960 and 1970, and about one-half of the persons die a tragic death. As with diphtheria adults forget to have their tetanus shots or boosters after the first series. Unless tetanus boosters are acquired at 10 year intervals, protection can dwindle to a low level. Parents frequently need tetanus and diphtheria boosters and should get them when they take their children for immunizations. Many men have not had a tetanus booster since World War II, or the Korean War, when they received their immunizations in the service. Many women have never had an inoculation. Because the tetanus organism lives in the soil, people who work in gardens should have a tetanus toxoid booster. When people are seen in physicians' offices, hospitals or clinics, they should be questioned about their tetanus immunization at the time their first medical history is taken. Tetanus toxoid should then be given if there has been no previous immunization.

A triple vaccine against pertussis-tetanus-diphtheria, called DPT, should be started for babies during the second month of life. A schedule showing when immunizations should be given is presented on page 220.

Polio and smallpox are two diseases which have been effectively controlled by vaccines. Smallpox vaccine was introduced by Dr. Edward Jenner in 1796 and the last case occurred in Florida in 1946 after years of struggle to eradicate the disease. There have been no cases of "wild virus" polio in Florida in the past five years - after the introduction of Salk and Sabin polio vaccines. But at the present time, there are great numbers of children in Florida who are unimmunized against polio and an outbreak could occur at any time.

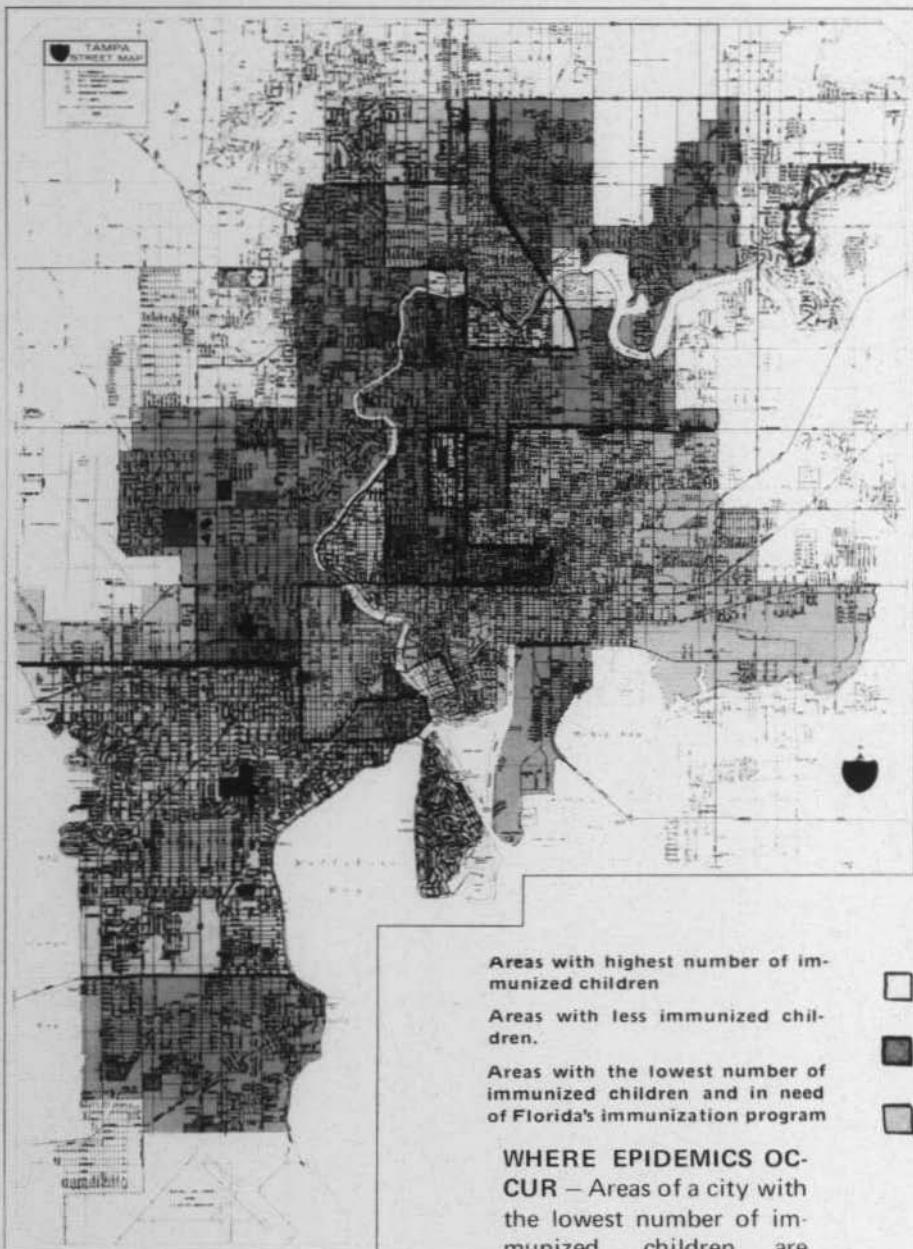
The Case of the Unreported Measles Case

Seven-year-old Mary had the measles. Her mother, through previous experience, recognized the measles symptoms and believed she knew what to do for her daughter. She did not take Mary to the doctor. Neither did she report the case to the county health department. (Physicians, also, fail to report cases of reportable childhood diseases to the health agency - as required by law.)

Prior to the appearance of the rash, Mary went to school and played with her friends. For 24 hours before the first symptoms, and for three or four days after the rash could be seen, Mary was exposing all of her friends.

Mary's mother should have reported the case of measles to the county health department. If the health agency had known about Mary's illness, a public health nurse would have called at the home to inquire about the case. A survey would have been made to determine whether other children in Mary's school and the neighborhood were immunized against the disease. If necessary, an epidemiological team from the county health department and Division of Health would have come to the school and immunized children - both in the school and in residential areas served by the school. The vaccine usually comes from the supply stored in the Division of Health headquarters in Jacksonville.

Why is it necessary to report cases of communicable diseases? Through reporting, the county health departments and Division of Health can discover where cases of these diseases are and with vaccine immunize people who have been in contact with the infected individuals. If Mary's mother had reported the case of measles as soon as she recognized the first symptoms (a discharge of drainage from the



Areas with highest number of immunized children



Areas with less immunized children.



Areas with the lowest number of immunized children and in need of Florida's immunization program



WHERE EPIDEMICS OC-

CUR — Areas of a city with the lowest number of immunized children are potential areas of epidemics of vaccine-preventable diseases. These areas are where Florida's immunization programs are needed.

nose - similar to a cold), the county health department could have immunized the children who had been exposed by Mary.

If Mary's mother had called the health department when the rash appeared (several days after Mary became infectious and exposed other children, including Billy), the epidemiologists would go out and immunize more children exposed by those who were close to Mary - including those in Billy's Sunday School class.

The Epidemiologist's Crystal Ball

By the assembling of facts about the communicable diseases (called surveillance techniques) over a period of years and thorough knowledge of infectious disease ecology, the Division of Health can predict future outbreaks of an epidemic of a communicable disease. It cannot tell precisely when the epidemic will occur, but can predict that it will come.

By ferreting out cases of hepatitis over a number of years, the Division of Health has been able to predict that in the years 1969, 1970 and 1971, there will be an increase of infectious hepatitis. At the present time, the state is experiencing the beginning of this increase. The last peak in the hepatitis cycle was in 1961 when more than 1,400 cases were reported. The cycle reached its lowest point of some 600 cases in 1963, and it is beginning to rise with 1,434 cases reported to health agencies in 1969.

Florida also has potentially susceptible populations for epidemics in polio, diphtheria, measles, rubella, whooping cough, mumps and other diseases. Despite the availability of vaccines there are groups of children who are unimmunized.

Adequate and continuing immunization of people can provide for the total elimination of those diseases which are caused by viruses - polio, smallpox, measles, rubella and mumps. As long as there are people continually contracting the diseases - no matter how few - and susceptible people remain within the same area so the viruses can be transmitted, the diseases will continue to flourish, possible epidemics threaten, and high levels of immunity will be necessary to avoid them.

As long as susceptible individuals are separated by distance and/or time, there is little danger of an epidemic. But when there are clusters of susceptible persons in one place, at the same time, an epidemic can occur. It is like overloading a rowboat. As long as few individuals get into the boat at one time, there is no danger; if the boat is overloaded by too many persons at the same time, it will sink.



EXCHANGING DISEASES — Schools and playgrounds are places where children mix freely and contract childhood diseases.

Where do Epidemics Occur?

In every group of people there are individuals who do not like to go to a physician or dentist. The waiting rooms of private physicians and public health clinics witness the reluctance of children to "see the doctor." Youngsters and many adults fail to recognize the doctor as their friend who can protect them from disease and future illnesses. Much of the attitude children have when they visit the clinic, doctor's or dentist's office, is the result of the attitude and comments of their parents. Some threaten young children with "If you're not good, I'll take you to the doctor." This could affect the relationship of physicians and patients for many years.

There are people of the lower socioeconomic groups who, through the lack of knowledge of what is available for them in the way of medical care, nutritional diet, personal hygiene and proper sanitation, need a great portion of the medical services available through public health agencies. A very small portion of the population, usually the

disadvantaged persons, account for a large part of medical care received. The higher socioeconomic groups are more knowledgeable about how to acquire preventive medical care, such as immunizations, and have the means to obtain it. Epidemics of communicable diseases occur more often in districts where there are boarding houses, slums, inadequate sanitary facilities, and unhealthy environment and where many people live in close contact with each other.

Schools are frequently the places where epidemics occur. They have been called "places where children exchange diseases." Willie, Billy, Mary, May and all those attending the Elm Valley Hills Elementary School sit in close proximity in the classroom and lunchroom and they mix freely during recess. On their way to their homes, the children meet children from other grades. They expose children from other communities at Scout meetings, Sunday Schools and parties.

There are also opportunities for the exchange of communicable diseases among adults and children at military bases, summer camps, colleges and universities, although there is less spreading of the childhood diseases.

The Delivery of Health Services

The Division of Health and its partners, the county health departments, are charged with the control of communicable diseases by Florida Statutes. They are also charged with the education of the public in a community effort to control epidemic diseases. The control of communicable diseases is a foundation of public health.

Public health has frequently been defined as the well-being of the community, including the physical, mental and social aspects of health. This concept is based upon the health of the individual and its preservation. Sometimes prevention has come to mean "treating" a person who is suffering from a particular disease to "prevent" him from being hospitalized at a very high cost. "Prevention" of disease also includes the immunization of healthy children to keep them that way and to prevent future, or secondary, complications from so-called "harmless" childhood diseases.

Public health practice, which carries out the principles of disease prevention, require the services of many professionals, not only those who give medical care and health education. The practices also require the knowledge of the existence of disease and the levels of susceptibility of the people in the community - a kind of community diagnosis.

The work of the public health professionals is dictated by the public

which decides what it needs and what it can provide through organized, rather than individual efforts. Due to the increasing cost of hospitalization, Medicare and Medicaid have become community and public health responsibilities. These extend public health programs to the point where they provide medical care for those who are past the point of needing "preventive medicine."

Carrying out health services to prevent childhood diseases is the responsibility of the health agencies, specifically the county health departments. The people in the health agencies who are most closely associated with the immunizing of children are the clerks - who maintain the files and pull the medical records of those who come to the clinic; and public health nurses - who usually give the vaccine.

The public health nurse and community health aide also carry the message of immunizations to the community and urge lower socioeconomic families to bring their children in for immunizations. Too frequently there is a chasm between the middle class health professionals and the people they are trying to reach. The community health worker is an important and valuable person in bridging this gap.

Let's Start With Babies

The time to start immunizing children is when the mother takes her infant to the baby doctor (pediatrician) for its first check-up. Many children are thus immunized by private physicians. To eradicate communicable diseases, the Division of Health is participating in a nation-wide Infant Immunization Surveillance Program. The objective is to immunize all babies of Florida against all diseases controlled by vaccinations before they are two years old.

The Program, which is carried on by 59 of the state's 67 county health departments, starts initially when the birth certificate for an infant is filed with the Bureau of Vital Statistics in the Division of Health. From these birth certificates, the Division of Health prepares four cards on each infant and sends them to the county health departments, which in turn, mail them to the parents. Three of the cards are mailed at various times to the parents of the infants; the fourth is kept in the county health department office as a registration card.

Mr. and Mrs. Norman Roberts have had a son, Norman Junior. When the baby was three months old, the county health department mailed the Roberts a card congratulating them on the birth of the baby and asking them to make sure the infant was started on his diphtheria-pertussis-tetanus immunizations and polio series. Mr. and Mrs. Roberts are very much interested in their son's health and took the card and

CONVERTED TO TAPE

— A Division of Health "data encoder operator" puts information from a birth certificate on to tape for the computer.



baby to their physician who gave the necessary immunizations. The doctor then signed the card and mailed it back to the county health department.

A clerk at the health department noted on the registration card when the immunizations were started. Norman Junior was well on his way to a healthy life.

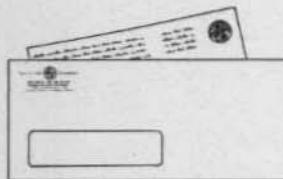
Mr. and Mrs. James Rogers also had a daughter, Maria. They, too, received a card from the county health department. They failed to return the card but they did take their baby to a private physician to start immunizations. A clerk at the county health department called the Rogers and they told her the baby had been started on her DPT and polio immunizations at Dr. Jones' office.

The Randolph family had three children, including a newborn baby. The mother received prenatal care at a public health clinic during the last two months of her pregnancy and the baby was born at public expense. Soon after Baby Lee was born, Mrs. Randolph returned to work and left the infant and other two children, ages two and four, with a grandmother. Mrs. Randolph also received a card but did not return it. Neither did she take her baby to the clinic for its six-weeks checkup.

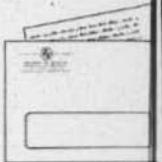
(Continued on page 210)

Florida's Infant Immunization

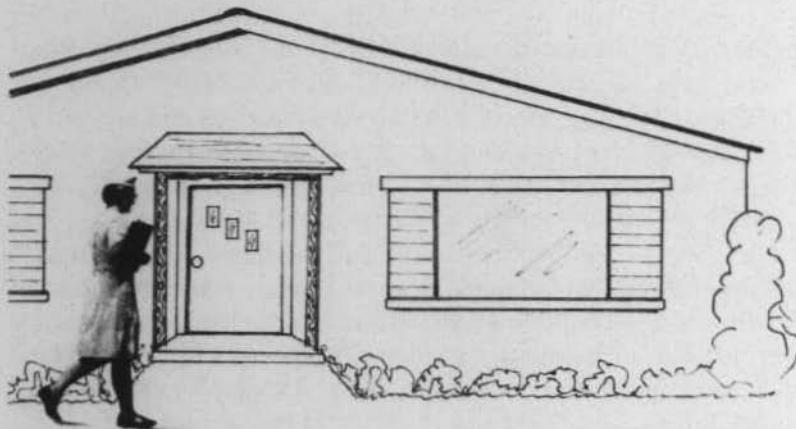
INITIAL CONTACT — The county health department sends to parents of three-month-old infants the first of three cards prepared by the Division of Health. This card urges the parents to have their baby immunized against polio, diphtheria, pertussis and tetanus.*



SECOND CONTACT — The county health department sends a second card when the infant is six months old to determine if the immunization against diphtheria, pertussis and tetanus, and of the need for mumps and smallpox boosters.*



IF NO RESPONSE — The county health department clerk starts a telephone follow-up of parents who do not respond to the initial mailing.

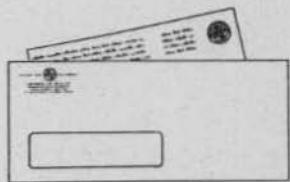


IF THERE IS NO TELEPHONE —(or there is no response) — The public health nurse makes a home visit to urge parents to have their children immunized against disease. On all visits, the nurse also checks to see if there are other health problems in the family.

*The county health department utilizes other means, such as home visits, to locate parents who do not respond to the initial mailing. This helps to prevent unnecessary telephone calls and reduces costs.

Immunization Surveillance System

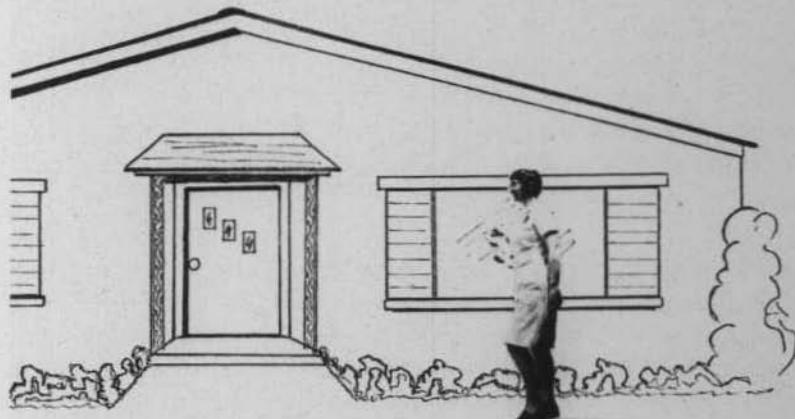
SECOND CONTACT — The county health department sends a second card when the infant is 12 months old. This card reminds parents to have their infant immunized against measles, rubella, diphtheria, pertussis, tetanus, polio, and mumps.



THIRD CONTACT — The county health department sends out a third card when the child is 18 months old to determine overall immunization levels for diphtheria, pertussis, tetanus, polio, measles, rubella, smallpox, and mumps. This also enables the health department to locate and immunize unprotected children.*



IF NO RESPONSE — The clerk of the county health department starts a telephone follow-up of parents who do not respond to the card.



HOME VISIT — The public health nurse makes a home visit if there is no telephone, or if there is no response to the mailed card or telephone message. She also urges the parents to have all of their children immunized.

FOUR CARDS — Immunization surveillance cards are addressed by computer for the county health departments.



The Randolphs had no telephone so a public health nurse, Mrs. Kendall, went to find out why the baby had not been brought in for his checkup and immunizations. Mrs. Kendall found no one at home. She went next door to inquire if the neighbors knew if the family still lived at the address and was told that the children were kept during the day by Mrs. Randolph's mother who lived four blocks away.

Mrs. Kendall went to the grandmother's house, found that the mother of the three children worked, and was unable to bring the children to daytime clinics.

"We have a Wednesday evening clinic for babies," Mrs. Kendall told the grandmother. "Do you think Mrs. Randolph could bring the baby then?"

The grandmother thought that this could be arranged and Mrs. Kendall made an appointment for the next Wednesday for Mrs. Randolph and Baby Lee. Wednesday evening clinic came; Mrs. Randolph and her baby did not show up at the clinic. Mrs. Kendall went back to the grandmother's house. This time, she found that none of the three children had been immunized against the common childhood diseases and urged the grandmother to see that the children were brought to the clinic. The grandmother said she would see that her daughter kept the appointment this time. Wednesday evening arrived and Mrs. Randolph came to the clinic with her three children and their immunizations were started.

When Norman Junior, Maria and Baby Lee were 12 months old, their parents received another card, reminding them to have their babies' DPT series completed, and to have immunizations started to give them protection against measles, mumps, rubella and smallpox.

Again the Roberts took their baby and card to their physician who started Norman Junior on his new immunizations, filled out the card and returned it to the county health department. The clerk brought the registration card up-to-date. The Rogers and Mrs. Randolph did not return their cards.

The third and last cards were sent out by the county health department when the babies were 18 months old. The Roberts' doctor by this time had completed all of Norman Junior's immunizations and the card was returned to the county health department.

The Rogers failed to return the card. When they were called on the telephone, they said Maria had received two DPT and polio immunizations. But despite promises to do so, they failed to have Maria inoculated against other childhood diseases. At the age of four, Maria was taken to a day nursery and contracted measles. Encephalitis and resulting brain damage occurred and Maria was left crippled and mentally retarded.

The card that was sent to the Randolphs' was returned by the post office marked "Moved, No Forwarding Address." The clerk referred the case to Mrs. Kendall who went out to the neighborhood where the Randolphs had lived to see if she could get a trace of them.

She went to the grandmother's house, but she, too, had moved. Back in the Randolphs' neighborhood, Mrs. Kendall found that the family had moved to a rural area of the county. Upon returning to the county health department office, Mrs. Kendall turned the case over to the public health nurse who had the district, a Miss Young.

Miss Young drove out to the rural area and located the Randolphs in a small settlement of several families. She asked Mrs. Randolph about bringing the children to the clinic to continue their immunizations and found that the mother had no means of transportation and there was no bus service.

Miss Young also found that there were a number of other children in the settlement who had not received their immunizations. Upon returning to the office, she discussed the situation with the county health officer. They decided that the nursing service would hold special immunization clinics in the settlement. When the community heard that special clinics were to be held in its midst, a local church group

offered the use of its building. Within a few months, all of the Randolph children plus many other youngsters - were immunized against childhood diseases.

There are three factors that make the Infant Immunization Surveillance Program work:

- * an interested county health department which will put clerical and nursing services to work to immunize children and give the Program a high priority on its schedule;

- * an interested and cooperative physician who will immunize children as part of his practice, who will refer to the public health clinic those families who cannot afford private medical care, who knows what services are available from the county health department; and who is willing to take a few minutes to complete the immunization cards and drop them in the mail; and

- * interested parents who are concerned about the health of their children; who are receptive to the services offered by their private physician or county health departments, and who will overcome such problems as transportation to see that their children are immunized.

The program is especially designed to identify and reach those children in the lower socioeconomic and/or hard-to-reach groups who especially need immunizations. Public health nurses should not use their limited time contacting those children who live in areas known to have good immunization levels.

In the recent diphtheria outbreak in Florida, the nine cases of diphtheria that occurred in Dade County all appeared in one area that contained 90 per cent of the unimmunized children of the county. This was a sharp contrast to the Homestead area, which also contained a large number of low socioeconomic groups and migrants, but which had an active clinic and public health nurses who went out and urged mothers to bring their children into the clinics.

Immunizations should be started as early in the life of the infant as possible. Some clinics and physicians start immunizing children at one month of age. The Division of Health and county health departments start immunizations at two months.

The "Bandwagon" Campaigns

The public of Florida is becoming accustomed to large mass immunization campaigns that have been popular during the past few years. The polio, measles and diphtheria campaigns have done a good

job of immunizing large groups of children, but too often they are the end of the community's efforts.

Public health workers, civic groups, voluntary agencies, local medical societies, school districts, churches and other governmental organizations work together to mount these campaigns and once the "bandwagons" are rolling nearly everyone is involved.

Labeled as "Measles Sunday" or "Polio Week," these campaigns are held in a number of locations in the community, usually schools or churches, playgrounds or shopping centers. The advance publicity in newspapers, and on radio and television stations and billboards bring out thousands of youngsters for their immunizations. And once the day is over, the community is satisfied that the campaign was effective and "now nearly everyone is immunized and we will have no more of this particular disease."

True - these "one-shot" campaigns are effective and necessary for reaching large groups of children and starting immunization programs. But after everyone goes back to his regular work, there is still much to be done to reach those children who did not take part in "Measles Sunday" or "Polio Week" and who are not immunized. Children are born into every community nearly every day and these, too, also need immunizing from the communicable diseases. When children who are born and not immunized are added to those already without protection, there develops a large group of children just waiting for a case of measles, polio or diphtheria to come along and threaten their health.

AT THE CLINIC — A public health nurse prepares to give a six-month-old infant his diphtheria-pertussis-tetanus inoculation.





MASS CAMPAIGNS — Large immunization campaigns are effective in reaching large numbers of children but this should not be the end of the community's efforts. (Photo courtesy of Florida Publishing Company)

The "bandwagon" mass immunization campaigns are just the beginning of the community effort. Then comes the hard work of searching out and immunizing all of those children who failed to get protected against the disease. The community must maintain a campaign to immunize those children who had not been born at the time the "bandwagon" rolled into town.

In September 1969, the Division of Health received its initial shipment of rubella vaccine and began a county-by-county program to immunize 330,000 children in kindergartens, day nurseries, and first and second grades.

Jet injector guns were acquired and the use of this method of immunizations provided the most effective way of immunizing large groups of children. Students in kindergarten, and first and second grades were immunized in less than an hour per school, causing a minimum of disruption.

By the end of May 1970, more than 160,000 children in this group were immunized and 51 of the 67 counties had started or conducted school programs. The programs will continue in the late summer of 1970 with a goal of immunizing all children between one and 10 years of age against rubella.

What is Your Name? Please Be Seated!

Most children in Florida are immunized by private physicians. But for those others who cannot afford to have private medical care, their parents must necessarily take them to public health clinics. It is with these children and the services given them that the Division of Health and county health departments are concerned.

Many clinics are run smoothly and efficiently. The waiting rooms may be bright and cheerful, sparked up with posters that proclaim immunizations, good nutrition and proper infant care. Others are drab, needing a fresh coat of paint to brighten the dirty, stained walls and crude benches. Clinics are held in courthouses, health centers, converted stores - old buildings, new buildings. Almost any type of building is provided by Boards of County Commissioners.

Children run and play and visit the restrooms. Mothers sit silently or they may chat with another mother about child-raising. Sometimes the youngsters carefully watch those who enter the inner sanctum of the clinic rooms and are aware of the protests of other children. Mothers, sometimes, are concerned because they have had to take time off from work.

FAST AND EFFECTIVE

— The jet injector gun is the most effective method of immunizing a large group of children. (Photo courtesy of Florida Publishing Company)



Mrs. Jenkins entered the crowded clinic with her three children and approached the desk. She gave the clerk her name and the names of her children. "Please be seated," the clerk said, and went to a file where she found records on the children. She added these cards to the stack already on the desk. If Mrs. Jenkins was new at the clinic, the clerk would obtain basic information for the records.

The attitudes of the clerks and nurses are important. Sometimes a smile helps cheer a worried mother and calms a wailing child. Sometimes the frustrations and impatience are reflected in the clerks' and nurses' voices and actions.

Mrs. Jenkins and the waiting mothers watched the clerk for direction. A name was called by a nurse standing in the door leading to the clinic rooms. A mother and two boys disappeared through the door. Other names were called and other waiting mothers and children entered the clinic rooms. The longer Mrs. Jenkins waited, the more apprehensive her three children became. Soon her name was called - "Mrs. Jenkins, Mrs. Henry Jenkins" and she with her youngsters were ushered into the white, newly-painted room.

"Hi!" said the nurse and proceeded to find out which one was Fred, Maggie and Charlie. She consulted the records and found that all of the children needed boosters for tetanus and Charlie needed polio vaccine.

The older children, Fred and Maggie, bravely volunteered to get their "shots" first, and despite a cringe, they showed how brave they were. Charlie decided that he was not so brave and dissolved into tears and tried to leave the clinic room. The efforts of the nurse and Mrs. Jenkins were required before Charlie was immunized.

With exclamations of "Big Baby!" the family left the clinic room and weaved its way through the waiting room benches and chairs (that were left from a family planning clinic the night before) and departed out the door.

When the IBM clock on the wall showed 2 o'clock, the clerk announced that registration for the clinic was closing and asked if there was anyone who had not registered. One lady, who had been busy talking to a friend, rushed to the desk to register her infant. The clerk intoned that the next immunization clinic would be held a week from the next Thursday.



AN IMPORTANT CLERK

— The immunization clinic clerk is one person who can see that the clinic operates smoothly. Her attitudes can play an important part in Florida's immunization programs.

In most public health immunization clinics, all of the children are seen. When clinics run through the lunch period, the hours are adjusted so the clerks and nurses can have a break. Many afternoon clinics continue past the traditional closing time. However, not all clinics are operated so smoothly. A pregnant woman may come to find a prenatal clinic is scheduled for another time and the clerk has to find out when she should come back.

Many times the list of clinics is not published nor posted and even the staff does not know when a certain clinic is being conducted. The clinics should be operated for the convenience of the families they serve. When they are held during traditional business hours of 8 to 5, many of the lower socioeconomic groups have difficulty in attending the clinics - either because they are working or because they lack transportation. County health departments are finding that it may be necessary to hold clinics on weekends and/or during evening hours when working people - the ones most in need of immunizations - can get to the clinics. Too frequently a mother who has taken time off from work to bring her child to a county health department clinic, is asked to return another

day because of a medical reason. A mother who just happens to bring her child to a prenatal or postpartum clinic, should be able to have him immunized while she is at the health department.

Too frequently the cold impersonal attitude of the staff, "snippy" clerks, distance and poor timing of clinics keeps away the "hard core" poverty group - the people who have not learned that they need the services that public health has to offer. These are the ones the Division of Health is most urgently trying to reach.

Getting the Message Across

Immunizing children in Florida requires the cooperation of private medicine and public health. The Department of Health and Rehabilitative Services, the Division of Health and county health departments could never get all of the kids immunized with present financing if private physicians did not do their part. In some counties, local medical societies limit the county health departments to immunizing those who are medically indigent.

HERE'S WHY! A public health nurse tells a mother that she should have her children immunized against childhood diseases and possible complications.



But getting the message across to parents is the responsibility of both private physicians and public health workers. Some people fail to see the need of immunizations and will not bring their children to a clinic. In one Florida city, a child died of a communicable disease in a home across the street from the county health department clinic building. When the public health nurse called at the home to inquire about the reasons the child died, the mother said if immunizations were "that important," why didn't the health department bring the vaccine to the home.

As with this mother, the priority people give immunizations will play an important part in the eradication of childhood diseases from the Sunshine State.

Our family, Mr. and Mrs. Roberts gave a high priority to the immunizing of Norman Junior against disease; Mr. and Mrs. Rogers gave immunizations a lower priority (perhaps a tire for the family car came first), and Maria became mentally retarded; Mrs. Randolph, on the other hand, had to give top priority to the necessities of life - food and housing.

Fortunately, most people are like the Roberts. Many will come to the clinics if they are sufficiently motivated by the public health nurse or community health worker. Other people merely need to be informed. Some people refuse immunizations because of religious beliefs.

But all of the children of Florida need to be immunized and most of them can be protected from communicable disease. Currently the Division of Health and Florida Department of Health and Rehabilitative Services are carrying on a three-year campaign to eradicate rubella in the state. Health officials feel that if they can immunize over one million children between one and 12 years of age within three years, a predicted rubella epidemic can be averted.

The immunization of children against childhood diseases can be accomplished through the combined efforts of:

* private physicians - who immunize many children in their clinics and offices;

* the Florida Department of Health and Rehabilitative Services and the Division of Health - which administer the public health programs;

* the county health department - which also immunizes children in clinics, and which coordinates, evaluates immunization levels and provides resources to correct weak areas with special clinics;

* the State Legislature and Congress - which provide finances for immunization programs;

* the community (including civic and business groups and private citizens) - which needs to be involved;

* the communications media - which serves as a strong stimulator to the public's response to immunization campaigns; and

* the parents - who must bring their children to their private physician or the health department to receive the vaccine.

Recommended Routine Immunization Schedule

AGE	IMMUNIZATIONS							DT	Tetanus
	DPT	Polio	Measles	Rubella	Mumps	Small-pox			
2 mos.	#1	#1							
3 mos.	#2								
4 mos.	#3	#2							
12 mos.			X						
13 mos.					X				
14 mos.						X			
15 mos.							X		
16 mos.	#4	#3							
5 or 6 years	Booster	Booster						X	

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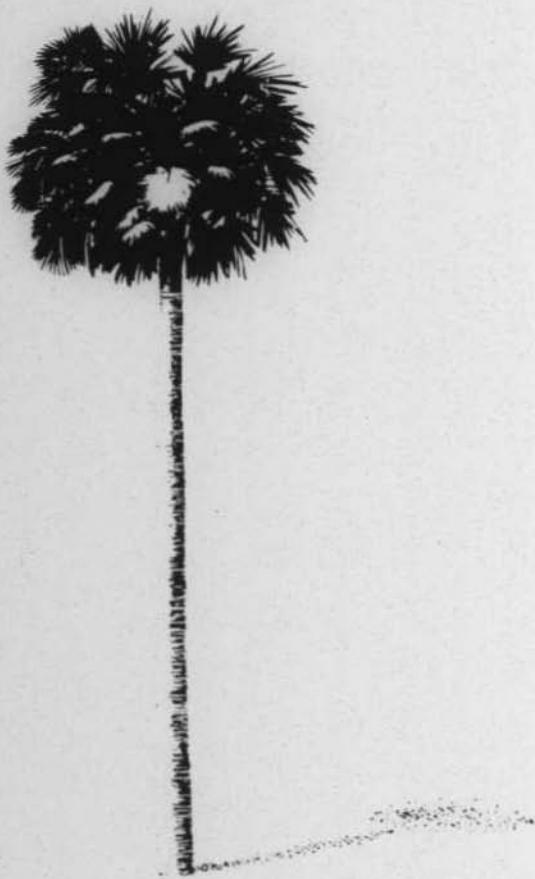
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FLORIDA HEALTH NOTES



VOLUME 62 – NO. 9

SEPTEMBER 1970

You Are What You Eat

Food Affects The Quality of Life

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GETTING A GOOD START (Cover photo) - A public health nutritionist discusses with a young mother her baby's eating habits. Foods the baby will eat during its lifetime will affect its health.



LUNCH TIME - Children at a child day care center enjoy their mid-day meal under the watchful eyes of attendants. A public health nutritionist serves as a consultant to the day care center.

You Are What You Eat

FOOD Affects the Quality of LIFE

* When 14-month-old Juan was brought to a day care center by his parents, he was listless and appeared dull. He had been fed mainly milk and cereal; as a result, Juan was found to have an iron deficiency anemia.

* May lived in a lovely suburban home and attended a private school. She had a tendency toward overweight, so she alternated between fad crash diets and eating binges of the sweets and desserts she craved.

* Judy Smith was a teenage bride expecting her first baby. She did not like to cook so she and her husband frequently snacked at the local drive-in on hamburgers, soft drinks and french fries.

* John Garrett worked as an accountant for a construction company. He skipped breakfast, grabbed a sandwich for lunch, and usually had a big dinner, preceded by a few cocktails. He spent the evenings snacking while watching television.

* Marge Brown, an elderly woman, lived alone. She hated to eat by herself and was too tired to cook. She often had "tea and toast" three times a day.

* Polly Henry received public assistance to help her care for her three children. The money she received was not enough to supply all of the needs of the family. She had no means of storing large amounts of food so she did not try to obtain commodity foods.

* Shirley Mark was always hungry, thirsty and losing weight. Although she ate what she thought was large amounts of food, she knew there was something wrong but she put off going to the doctor.

* Mr. Jones worked as a laborer. His income was too small to buy himself, his wife, and their eight children the meats, fruits, vegetables and other important foods that supply nutrients for a balanced diet and still supply the other necessities of life. The children were small in size, had many poor teeth and did not seem bright and lively as they should.

All of these people suffered the affects of poor nutrition because of the lack of enough food, the lack of the right kinds of food, poor food choices, or inability of the body to use food. With today's rising food prices, it is difficult to purchase a nutritionally adequate diet on a low income. But, there are many well-educated and financially-independent people who suffer from obesity, iron deficiency anemia or who show other effects of poor nutrition because of ignorance about the right kinds and amounts of food.

This issue of **Florida Health Notes** will tell you what malnutrition and hunger are; what are the best kinds of food for a balanced diet; about people who need food; about people who need to understand more about food; and what the Florida Department of Health and Rehabilitative Services, the Division of Health and the county health departments, voluntary organizations and other governmental agencies are doing to help these people.

What is Malnutrition?

Johnny Smith may not be hungry and may even have a full stomach - and even be overweight, but he may be suffering from malnutrition.

FLORIDA HEALTH NOTES

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Johnny may like sweets and snack foods; he may subsist on potatoes, breads and meat; and he may not care for milk, fruits and vegetables which would give him a balanced diet.

Malnutrition is a faulty or inadequate nutrition, or undernourishment resulting from insufficient foods, improper diet, overeating, or incomplete or faulty assimilation of food. Sometimes a person may eat enough of the right kinds of food, but his body may fail to digest, absorb or use the food to the best advantage. A person with continuing diarrhea does not digest and absorb all the food he eats, a person with diabetes does not properly use certain elements in food and sugar accumulates in his blood and is lost in his urine instead of being used for energy; a child with PKU (phenylketonuria) cannot use an element in protein foods and this substance can cause brain damage. These conditions seriously impair the proper functioning of the body and a person's health.

Malnutrition may contribute to immature babies, anemia (iron deficiency in women, children and other persons); complications during pregnancy, growth retardation, mental retardation, fatigue, dental problems in persons of all ages, development of some of the chronic diseases, and obesity.

A diet is what a person eats. It may be a special diet with limited foods and drink prescribed by a physician. Or it may be self-imposed. Unless a person's diet includes the proper amounts of all of the right kinds of food, a person may be malnourished. A good diet means choosing the right kinds of food at the market, storing and preparing them correctly, and then eating them at the table. More and more it means choosing the right foods from the vending machine, snack bar, drive-in, cafeteria and restaurant.

You Are What You Eat

For centuries a basic problem was "how to get enough to eat." Even after man had learned to till the soil and raise food animals, his food supply was still at the mercy of nature - wind, blight, floods, insects and similar hazards.

BREAKFAST - A public health nutritionist and a nutritionist from a Head Start Program observe children at breakfast at a community center.



Today many of these problems have been conquered. We irrigate when it is dry. We dike and dam to prevent excess water from reaching the crops. We spray and dust to prevent blight and insects. As a consequence, our food supply is abundant and a small number of highly expert farmers feed the nation and much of the rest of the world.

Modern processing, packaging and speedy transportation make a balanced diet available to Floridians the year around. But they also increase the choices of food sources of "empty calories," sweets, soft drinks and snack foods which offer calories without protein, minerals or vitamins. The road to good nutrition is clearly marked but many people still follow their old diet habits.

The problem is choosing the proper foods:

* May chooses to crash-diet; denies herself the right kinds of food and is literally undernourished.

* John Garrett's eating habits are very poor and he is growing fat and increasing his chances of heart disease.

* Marge Brown ceases to concern herself with wise food selections and speeds up her own aging process.

* Judy Smith does not eat properly to give her unborn infant the proper nutrition and she may have an immature baby.

* Shirley Mark's physical condition is deteriorating and by putting off going to her physician, she is making it harder to control her illness.

Each individual must learn to make good food choices for himself. The homemaker has the key responsibility for guiding these choices - both in the food she puts on the family table and in the way she teaches them to plan for their own needs. The American family eats one third of its meals away from home. The growth of the drive-in food outlets has



SCRAPPING HER PLATE

- A youngster at a Head Start Center cleans her plate after a nutritious breakfast.

been tremendous in the past years but too many of the snack foods available today are nutritionally "junk". The parents set patterns for their children which will influence the lives of their immediate family and families yet to come. The effects of a consistently nutritious diet are reflected in good health generation after generation.

Each day we learn more about the way foods work in our bodies. Our knowledge has dramatically expanded in the past few decades and is certain to expand further in the years to come. We are never sure we have learned all there is to know about the nutrients and the way they work together. Substances in foods are still under investigation. The 1968 revision of the National Research Council's Recommended Dietary Allowance states allowances for 16 nutrients where previous editions had included only nine. The importance of the trace nutrients needed in small amounts is increasingly being recognized.

But new discoveries do not necessarily change what we already know. They may strengthen, modify or add to it. But the good basic nutritious diet, including meat, fish, poultry, milk products, fruits and vegetables and enriched whole grained breads and cereals, outlined originally by governmental agencies in the 1930's has changed little over the years. Tomorrow's food headlines may be important but before you make any changes in your eating habits, consult with someone who knows - your physician or county health department nutritionist - to see if you should change.

Foods have essential nutrients that every normal person needs. These nutrients are compounds which occur naturally in food. They help the body function at its best and some provide energy. Vitamins, minerals, protein, fat, carbohydrates are all nutrients essential to good health. Water is also essential.

There are some 60 nutrients known to be essential to man. These can be supplied in some 10,000 foods available on the shelves of a well-stocked supermarket. Some types of foods contain a larger share of protein, vitamins and minerals than other types. The foods rich in the most needed nutrients are called "basic foods." By eating some of each of the basic foods, you should receive adequate protection.

Basic Foods and Key Nutrients

Following are the basic food groups, the daily servings needed by people on a normal diet, the important nutrients, and the role they play in the body functions:

MEAT GROUP

Two or more daily servings

Beef, veal, lamb, pork, variety meats, such as liver, heart and kidney; poultry and eggs, fish and shellfish. As alternates - cooked dry beans, cooked dry peas, nuts, peanuts and peanut butter.

Count as serving: 2 to 3 ounces of lean cooked meat without bone; 2 eggs; 1 cup cooked dry beans or peas; 4 tablespoons peanut butter.

Foods in this group contribute

protein - which builds and repairs tissues, helps build blood and fights infections, builds enzymes and hormones which regulate body processes;

riboflavin - assists in keeping skin, tongue, and lips normal; prevents scaly skin around mouth and nose;

thiamine - helps promote normal appetite and digestion; keeps the nervous system healthy and prevents irritability; assists body to utilize energy from food;

niacin - helps keep nervous system healthy and skin, mouth, tongue, and digestive tract in healthy condition; assists cells in using other nutrients;

iron - combines with protein to make hemoglobin (the red substance in the blood that carries oxygen to the cells).

MILK GROUP

Some milk daily for everyone

Children under 9 years of age -
2 to 3 cups

Nursing mothers - 4 or more
cups

Milk can be fluid, whole,
evaporated, skim, dry or



Children 9 to 12 - 3 or more
cups

Teenagers - 4 or more cups.

Adults - 2 or more cups

Pregnant women - 3 or more
cups

**WHAT DO YOU FEED
YOUR FAMILY?** A public
health nutritionist dis-
cusses family eating habits
with a Seminole woman at an Indian reservation
clinic. During her visit to
the reservation, the nu-
tritionist gave a food
preparation demonstration.

buttermilk; cheese and ice cream
may replace part of the milk; 1-
inch cube cheddar cheese equals
1/2 cup of milk; 1/2 cup of ice
cream equals 1/4 cup of milk, 1/2
cup of cottage cheese equals 1/3
cup of milk.

Milk is the leading source of
calcium which helps build bones

and teeth, assists blood to clot, muscles and nerves to work, and regulates the use of other minerals in the body;

Vitamin A - helps keep skin

clear and mucous membranes smooth, firm and resistant to disease; helps prevent night blindness, and controls bone growth. Milk is also a good source of protein, riboflavin and many other nutrients.

VEGETABLE-FRUIT GROUP

Four or more daily servings

Include - a citrus or other fruit or vegetable which is important for vitamin C (Ascorbic acid) which is needed for healthy gums and body tissue; helps make cementing material that holds body cells together; assists in keeping walls of blood vessels firm; helps in healing wounds and broken bones.

Good source for Vitamin C - grapefruit or grapefruit juice; orange or orange juice; cantaloupe, guava, mango, papaya, raw strawberries, broccoli, Brussels sprouts, green peppers, sweet red peppers.

Fair Source of Vitamin C - Honeydew melon, lemon, tangerine or tangerine juice, watermelon, asparagus, raw cabbage, garden cress, mustard

greens, Irish potatoes and sweet potatoes cooked in the skin, tomatoes and tomato juice; turnip greens.

Good source for Vitamin A - Dark green and deep yellow vegetables and a few fruits served at least every other day, namely, broccoli, cantaloupe, carrots, chard, collards, kale, mango, persimmons, pumpkin, spinach, sweet potatoes, turnip greens and other dark green leaves.

The remaining of 1 to 3 or more servings may be of any fruit or vegetable. They are valuable because of the vitamins and minerals they contain. Count as 1 serving: 1/2 cup of vegetable or fruit; or a portion as ordinarily served, such as 1 medium apple, banana, orange or potato; half of a medium grapefruit or cantaloupe, or the juice of 1 lemon.

BREAD-CEREAL GROUP

Four or more daily servings

Whole or enriched grain. This group includes breads, cooked cereals, ready-to-eat cereals, cornmeal, crackers, flour, grits, macaroni and spaghetti, noodles, rice, rolled oats, quick breads and other baked goods if made with whole grain or enriched flour.

Count as 1 serving: 1 slice of bread, 1 ounce ready-to-eat cereal,

1/2 cup of cornmeal, oatmeal, macaroni, noodles, rice or spaghetti.

Food in this group furnished worthwhile amounts of protein, iron, several of the B-complex vitamins and food energy, as well as carbohydrates which help carry to the body's cells other nutrients present in foods.

OTHER FOODS

To round out meals and satisfy the appetite, people use some foods not listed - butter, margarine, other fats, oils, sugars and unenriched refined grain products. These are often ingredients in baked goods and mixed dishes. Fats, including butter, margarine, salad oil and other food fats, supply large amounts of energy in small amounts of food. Vitamin D, found in Vitamin D-milk, fish liver oil and sunshine (not a food) helps utilize calcium and phosphorus to build bones and teeth.

The Need for Right Kinds of Food

Because we know so much about foods and what the body needs, it has been suggested that we should be able to scientifically proportion a synthetic diet to provide us with the necessary nutrients.

There are several reasons why science is not moving in that direction. So far special formula diets have not been popular.

Nature's inducement to eat is appetite and appetite comes partly from hunger and partly from the appeal of food. The family dining

room is more than just a feeding station; it is the heart of the home for family warmth, happy customs and social training. Ex-servicemen remember K-rations from World War II - compressed enriched foods that were "good for them" - but the soldiers did not really like them and so did not eat them. Even the astronauts are asking for a more varied menu in their training programs and flights to the moon.

A nutritionist may examine a family's eating patterns, the food each person eats, and check it against the recommended dietary allowances of nutrients for a healthy and strong body. If you require a normal diet and eat the recommended amounts listed above, you should not need vitamins, pills or other food supplements, unless your physician recommends them for a specific purpose.

But everyone is different. The amounts of food required by a preschool child are different from those required by a laboring man; a grandmother of 70 has still different needs.

Infancy - This is a period of rapid growth - both of the body and brain. Food provides the material for this building and what the infant eats can influence his stature and mental development. During the infant's first few months of life, eating, digesting, elimination and sleeping are major functions. Milk or formula are earliest foods, followed by orange juice and other sources of Vitamin C, precooked infant cereals, strained vegetables and fruits, and then mashed foods. Eggs should be started cautiously because they are one of the foods most likely to cause an allergic reaction. Regular schedules of meals are necessary. Should the infant suddenly find a food uninteresting, the mother should take this in stride and make sure the foods the child eats are high in nutrients.

Childhood - Going to school marks the beginning of nutritional freedom when the child begins to make his choice of foods. Small children often prefer snacks to nutritious meals. The schoolchild should be prepared by good eating habits already established at home by serving a variety of appetizing foods and well-balanced meals.

Schoolchildren have need of protein and other nutrients. Milk, meat, fruits and vegetables should be used for snacks as well as meals. Should your child develop a dislike for certain foods, have him help prepare the meals and he may find it harder to refuse to eat something he made himself. Should the child be overweight, the cause may be snacking. However, if a special diet is required, it is best to see your physician.

Adolescence - Too often teenagers, especially girls, are the most malnourished group of the population because of crash diets or a diet of snacks, including hamburgers-french fries-pizza-pickles-soft drinks. To meet the demands of growing bodies and the need for protein, teenagers should have two servings of protein-rich foods, plus four glasses of milk each day. But misinformation about nutrition leads many teenage girls to avoid milk and important foods rich in iron. Boys prefer red meat; but both girls and boys frequently forget the nutrients available in seafoods, cheeses, poultry, milk and fruits and vegetables.

Athletes - Nutritionally, an athlete is not any different from the average person. He just uses more calories during practices and performances. Depending upon the strenuousness of the sport, he may burn up anywhere from 3,000 to 6,000 calories a day. High protein foods may build muscle during training but should be kept at a minimum prior to a game; because athletes frequently become jittery, it is better to eat lightly before a game or contest. More calories may be needed for some sports, such as football or hockey.

Pregnancy - All the nutrients an unborn baby needs are supplied by the mother as well as those she requires for her own health. A pregnant woman, like everyone else, needs a wide variety of foods. Her diet should be rich in protein, vitamins and minerals, with enough fats and carbohydrates to meet her energy requirements without gaining excessive weight. Expectant mothers should be concerned about the quantity and quality of foods they eat and should follow the advice of their physician and nutritionist very closely.

Middle-age - As one grows older, the metabolism of the body changes. People may gain weight if they continue to eat as they did when they were younger. The average American's diet would be suitable if he were more active - stalking prey, defending his family, planting and reaping crops. For the middle-age male, who often eats foods in excess of body needs-including those high in saturated fats and



THIS IS THE WAY - A public health nutritionist demonstrates a home water distiller for a patient with heart disease. The machine removes salt and other minerals from drinking water.

high in calories, it has been shown that the susceptibility to heart disease, circulatory diseases, diabetes and liver diseases tend to increase sharply. The female is luckier for a while but she tends to share her husband's tendency toward obesity and elevated cholesterol in the blood. Exercise should be a regular part of the middle-aged person's life, as well as diet low in calories and with an emphasis on lean meat, vegetables, fruit and low fat milk products.

Old Age - Elderly people have special nutritional problems because of lesser energy needs. They are frequently handicapped by poor teeth, dulled senses of taste and smell, and difficulty in swallowing. Some elderly people eat imbalanced diets and too little food; others have excessive eating as their life's main pleasure. The elderly persons need a varied, well-balanced diet, including needed protein, minerals and vitamins, but fewer calories.

Effects of Not Having the Right Kinds (or Enough) Food

The special consultant to the President of the United States, in reporting on the White House Conference on Food, Nutrition and

Health, said the goals of the conference were the elimination of hunger and malnutrition through a nation-wide nutrition education program and the development of a national nutrition policy.

He said, "The rationale behind these goals is that approximately 90 per cent of the population has enough to eat, perhaps is even overfed. However, approximately 10 per cent of our people cannot purchase a diet that is adequate for the maintenance of health, and the entire American population is poorly informed about nutrition. It is this ignorance that allows food faddist to prosper and the rich and the poor alike to suffer from degenerative disease related to diet."

Various studies have been done in the United States to establish the extent of malnutrition. While some of these studies did not include Florida, many of the same symptoms of malnutrition could probably be found in the Sunshine State.

These nutritional status studies included physical examinations, recent medical histories, bone x-ray measurements, and anthropometric surveys, which take into account the differences in body structure. Clinical symptoms, those which are evident through physical or other examinations, are apt to appear only after the individuals have had long periods of inadequate nutrition.

A random sampling of people who have low incomes (less than \$3,000 annually) revealed some sad statistics. A few children had "potbellies" which showed a protein-calorie malnutrition. A few youngsters were suffering from rickets, which indicated a shortage of Vitamin D. Some persons were suffering from enlarged thyroid glands, due to insufficient iodine in their diets. Many individuals had poor condition of hair, skin and lips, which indicated poor nutrition. Both adults and children had missing or decayed teeth. One-third of the children had low hemoglobin levels and large numbers of adults had levels generally associated with poor nutrition.

Insufficient supplies of calories and nutrients led to retarded growth of young children and may have affected learning ability, mental capacity and behavior. There was also "hidden hunger" in which the individual may not recognize any particular symptoms, but if he is subject to continued inadequate diet and additional stress, such as hard

(Continued on page 242)

The Bag Lunch Program

Many children who participated in the recreational program of Jacksonville during the summer of 1970 did not go hungry after the school lunchrooms closed for the vacation period. Through the joint efforts of the federal government, the city of Jacksonville, The Greater Jacksonville Office of Economic Opportunity, and the Board of Public Instruction, some 15,000 bag lunches were distributed each day to 46 schools and playgrounds in poverty areas.



WHAT'S FOR LUNCH - Some of the 15,000 Jacksonville children who receive bag lunches through the recreational department's playgrounds prepare to eat their lunch.

physical labor, his performance may be reduced. A poor physical condition due to inadequate food could make a person more susceptible to "colds" infections, vague aches and pains and general lack of well-being.

Each year Florida's vital statistics list a number of deaths specifically caused by nutritional diseases. In 1969, two deaths were caused by nontoxic goiter; 89 deaths from avitaminosis and nutritional deficiency; and 13 from deficiency anemias. Other nutritional problems were probably related to but not defined on birth and death certificates.

Poor nutrition of mothers during pregnancies is increasingly cited as a major factor in premature births. Likewise, infant mortality has many causes but an infant poorly nourished during the prenatal period and the first year of life is less able to survive infections or other stresses.

Malnutrition is often seen in pregnant teenage girls, whose own growth is not completed; and in illegitimate births, because mothers usually do not receive adequate medical care.

Among middle-age and older adults, degenerative diseases are major causes of death. Health workers believe that obesity and dietary factors, including saturated fats, refined sugars and alcohol, may contribute to diseases of the heart, stroke, diabetes, cirrhosis of the liver and hardening of the arteries. In 1969, these diseases ranked first, third, eighth, ninth and tenth as the causes of death in Florida.

Obesity is observed in many clinics and schools. Nationwide studies show that 10 per cent of schoolchildren are overweight; life insurance companies indicate that 31 per cent of men and 23 per cent of women are 10 per cent above the desirable weight at ages 20 to 30. The number of overweight persons increase in the older age groups.

Unpleasant as it is to admit, there are some indications that Florida does have malnutrition. However, there are voluntary, governmental and private agencies, and groups and individuals doing something both to relieve hunger and correct malnutrition. It takes the efforts of many agencies and individuals working together to solve the problems and meet the needs.

Hunger and Malnutrition in Florida

Hunger and malnutrition among Floridians have been the subject of citizens' reports, television documentaries, investigations by the Select Committee on Nutrition and Human Needs of the United States Senate.

The 1965 Food Consumption Study of the U.S. Department of Agriculture noted that poor diets were conducive to faulty nutrition but not synonymous with serious hunger and malnutrition. Among households with incomes under \$3,000 a year, 36 per cent had poor diets. At each successive level of higher income, a greater percentage of persons had adequate diet. But still, adequate incomes did not assure good diets. Among households with incomes of \$10,000 a year or more, nine per cent had poor diets.

The specific nature and extent of hunger and malnutrition in Florida have been and are currently under study. In order to determine how many people have insufficient food and/or are malnourished in Florida, it is necessary to study a sampling of the population. The Division of Health has just signed a contract with the National Nutrition Program of the U.S. Public Health Service to evaluate the nutritional status of some 2,000 migrant laborers and their families in Lee and Palm Beach Counties, beginning in November 1970. It is hoped that once these studies have been completed, it will be possible to do a general sampling of the representative total population group of Florida.

Dietary studies carried out among specific Florida groups in the past by public health nutritionists have showed that diets were repeatedly deficient in calcium, iron, and Vitamins A and C. Although poor diets were found in all income levels, they were most common in lower income groups. There appeared to be a lack of awareness of the relationship between food and health.

Generally, low income families cannot spend more than one-fourth to one-third of their income on food and still meet other basic needs. A family of four, with schoolchildren would have to spend approximately

\$1,400 a year to purchase food for a nutritionally adequate diet - at September 1969 prices.

Over 917,000 persons in Florida, or about 15 per cent of the population, were estimated to live with incomes less than the amount necessary to provide an adequate diet. In 1969, public assistance programs aided some 306,000 persons or about five per cent of the state's population. Commodity food programs assisted people in many counties. An estimated 23 per cent of eligible families and 49 per cent of public assistance recipients participated in commodity food programs.

While commodity food programs have been used in the past in Florida to feed the disadvantaged people, these will soon be phased out. The 1970 Legislature passed a food stamp law that will set up food stamp programs in every county.

Food for the Disadvantaged

The first need of people who are chronically hungry is a dependable, quality food supply. Commodity foods, distributed by the Florida





COMMODITY FOODS - Some of the millions of dollars of commodity foods received annually in Florida are unloaded and stored in a warehouse before being distributed (opposite page). Some of the 21 food items available through the commodity food program are ready for recipients (above).

Department of Health and Rehabilitative Services' Division of Family Services, have assisted many persons in the lower socioeconomic groups to obtain foods for a nutritious diet. During the fiscal year ending June 1969, over 56,314 tons of food, valued at \$32 million were received in Florida from federal sources.

Families who received public assistance and those who work but have an income below a specific level are eligible to receive commodity foods. In addition, the foods are distributed to public and private school feeding programs, private charitable institutions, state non-penal institutions and non-profit summer camps for children.

The foods consisted of 21 items which would provide 60 to 100 per cent of the daily recommended dietary allowances for the major nutrients if all of the foods were used and fairly apportioned.

Nutritious breakfasts and lunches are available during the school year in many counties for children who are in need of food. These meals

are provided by federally-subsidized programs made possible by the National School Lunch Act of 1946, the Child Nutrition Act of 1966, and Special Food Service program for Children, a 1968 amendment to the School Lunch Act. These programs are administered by the Florida Department of Education's School Food Service Division, and the counties' Boards of Public Instruction. The meals are provided free, or at a reduced price for children whose families are on limited income or unable to pay, and for a nominal fee for children who can afford the meals.

The Child Nutrition Act provides for a breakfast and lunch, with milk in the mid-morning, mid-afternoon and immediately after school. The National School Lunch Act promotes a good lunch for schoolchildren in order to build healthy and strong bodies and alert minds. The Special Food Service Program, aimed at improving the nutrition of preschool children, provides meals in day care centers, settlement houses, recreation centers and summer camps which provide day care for children of low income families. All of the programs are aimed at teaching good food habits.

Several projects in Florida also provide hot meals to the elderly who are confined to their homes.

One hot meal, five days each week, is delivered to 150 persons by the Neighborly Center in St. Petersburg at a maximum cost of 75 cents per meal. This is provided to persons 60 years of age or older who cannot leave their homes to obtain food or who are unable to prepare meals for themselves.

"Meals on Wheels Program" in Englewood operates from a local church under the direction of a retired restaurant owner, with deliveries by volunteers. A low cost nutritious meal is provided community residents who are mentally, physically or financially unable to obtain food. Meals are prepared each morning and delivered at noon.

A feasibility study was conducted for a month in Jacksonville to find if it is possible to serve hot, pre-prepared nutritious meals to the tables of aged shut-ins. A federal grant made available to Food Care Institute of Deerfield, through Cathedral Foundation, a church organization, to conduct the one-month study among a sample of a group of aged people.

A van, equipped with an electronic oven and built-in food handling equipment and manned by personnel, visited the homes of the recipients at the same time each day. Workers placed the tray of prefrozen food in the electronic oven and the meals were served hot and tasty in seconds. In addition to the home meals, hot meals were served to a group of elderly citizens at a community center.

Head Start programs in 12 counties provide breakfast, lunch and morning and afternoon snacks to children of low income families. Often serving as day care centers, these programs are aimed at giving underprivileged youngsters an equal start with other children by providing them with adequate nutrition and cultural advantages.

Education in Nutrition

The Division of Health and other governmental agencies carry out programs to inform the public of ways to better nutrition.

IN-SERVICE EDUCATION - Public health nurses are given a lesson in nutrition by a public health nutritionist. This will help them better serve their patients. Education is a major part of the work of the Division of Health's nutritionists.







3



MEALS-ON-WHEELS - A tray of prepared, prefrozen food is placed in the electronic oven of the specially-equipped van just before it is delivered (1). The nutritious meal is complete in every respect (2). The hot meal is delivered to the home of an elderly man who is unable to prepare his own meal (3 and 4).

Home economic education in junior and senior high schools provides students and adults with instruction on nutritional needs of individuals and families, well-balanced meals, budgeting for foods, buying practices and principles of food preparation.

Home extension agents work with community groups and youth clubs by offering courses and classes for housewives and future homemakers. The classes cover meal planning, menus, marketing and food preparation and preservation.

Community action programs in several Florida counties have set up programs to instruct low income families on how to purchase, store and use commodity foods, and to encourage gardening by providing seeds, fertilizers and insecticides. One part of nearly every program is teaching families to plan budgets so they will know how to get the most

from their food dollars. Some programs are particularly aimed at migrant laborers and elderly people.

The dietetic association in St. Petersburg has provided a telephone service to give information on normal nutrition. Volunteer members of the association answer questions pertaining to food purchasing, storage, preparation, caloric and nutrient content, standards for adequate diets, food fads and fallacies, and feeding of various age groups. Those needing dietary prescriptions, medical advice and diet counseling are referred to physicians.

Nutritionists and Health

The public health nutritionists of the Division of Health and the county health departments work closely with the Division of Family Services on commodity foods and food stamp programs. They coordinate their activities and planning together with nutritionists and staffs of other governmental and voluntary agencies by making referrals and assisting in training to help people obtain the food they need.

County health departments are dedicated to disease prevention and control. The public health nutritionists distribute current information on normal nutrition to promote good health and special diets for treatment of disease through health programs and clinics in maternal and child care and family planning; schools; dental, adult, migrant and family health clinics; and chronic disease clinics. Nutritionists guide women who are pregnant, mothers with children, and adults with special nutritional problems to choose the foods they need for their best health.

Services are provided by nutritionists employed by the Division of Health and county health departments. Emphasis is placed upon education of groups and consultation to professional health workers and educators, with some counseling of individual patients.

Nutritionists provide counseling to help people to improve the nutritional quality of family meals and to modify diets made necessary by health problems, such as overweight, diabetes, heart disease, kidney disease, PKU, and other conditions. They guide families in budgeting

their income, preparing commodity foods or using food stamps so that nutritious and appetizing meals may be assured.

Special groups with which the public health nutritionists work are the Head Start programs, migrant laborers, and Seminole and Miccosukee Indians. They give food demonstrations showing women how to cook nutritionally adequate meals, to use commodity foods and

CONCEPTS IN FOOD

Nutrition is the food you eat and how the body uses it.

- We eat food to live, to grow, to keep healthy and well and to get energy for work and play.
- Food is made up of different nutrients needed for growth and health.
- All nutrients needed by the body are available through foods.
- Many kinds and combinations of food can lead to a well-balanced diet.
- No food, by itself, has all the nutrients needed for full growth and health.
- All persons, throughout life, have need for the same nutrients, but in varying amounts.
- The amounts of nutrients needed are influenced by age, sex, size, activity, and state of health.
- The way food is handled influences the amount of nutrients in food, its safety, appearance and taste.
- Handling means everything that happens to food while it is being grown, processed, stored, and prepared for eating.

improve the quality of meals being served by the homemakers and to make nutritionally wise use of the money they spend in the food markets.



SERVICE AT HOME - An elderly woman receives her warm meal from the "meals on wheels" workers. A nutritionist interviews the recipients to get their reaction to the meals.

The nutritionists also serve as consultants to and coordinate their work with health workers, teachers, and school food service personnel. They assist the staffs of small hospitals, nursing homes, extended care facilities, child care centers and children institutions. They help with menu planning, diets prescribed by physicians, and administrative aspects of quantity food service. They guide institutions in meeting food service standards for state licensure and certification for Medicare and Medicaid.

The Heart of the Problem

There have been steps taken in recent years to combat hunger and malnutrition by many governmental agencies, private organizations and individuals. Many counties have nutrition councils which try to coordinate the nutritional services available to those in need.

Food assistance programs need to be established in areas of need and county distributing agencies should make efforts to see that eligible families have access to food for a nutritionally adequate diet. Special considerations should be given to pregnant women, preschool children, schoolchildren and the elderly. The food stamp law passed by the 1970 State Legislature is an additional step in providing the low income families with an adequate diet and the possibility of buying their own choices of food.

Nutrition education should be given through health programs and in public schools - from kindergarten through high school - so children will grow up with a knowledge of proper nutrition and food preparation.

Basic nutrition counseling is already supplied in some public health programs - including maternal and child health, migrant health, adult health and chronic diseases - but there is a need for more public health nutritionists. The Division of Health believes there should be one nutritionist for every 50,000 to 100,000 persons - depending on the number of elderly or disadvantaged persons in the community. Through efforts of the nutritionists, all health workers and community aides should be trained to assist and reinforce nutrition counseling and education.

We would like to report:

* That 14-month-old Juan was rehabilitated at the day care center by the staff who saw his needs for a balanced diet and encouraged him to eat nutritious meals. Through the assistance of the county health department nutritionist, Juan's mother was advised about a varied diet for her son and soon Juan was a healthy, bright-eyed two-year-old.

* Shirley Mark went to her physician and found that she was a diabetic. Through counseling by her physician and the county health

department nutritionist, Shirley was put on a diet and is enjoying good health for the first time in years.

* Through referral and counseling with the county health department nutritionist, Polly Henry was able to take advantage of commodity foods and these supply her family with nearly all of its nutritional needs.

* Marge Brown continued her "tea and toast" routine until she became ill and had to be put into a nursing home. There she learned from a nurse and institutional nutritionist about better food and soon became well enough to go home and prepare better meals.

* The Jones family was able to qualify for commodity foods and are now on their way to a healthy and better life.

We wish we could report that:

* May joined a weight-reducing club and ended her cycles of weight gain and loss; and Judy Smith was able to attend a prenatal clinic, start eating sensibly, and cooking nutritious meals for herself and her husband; and

* John Garrett took to heart a talk by a nutritionist, saw his doctor, and changed his eating habits; but

Like too many Floridians, they continued on their own concept of nutrition and May lost weight too quickly and became ill; Judy Smith's baby was premature and sickly; John Garrett gained weight and developed heart disease.

The Florida Department of Health and Rehabilitative Services, the Division of Health, and county health departments are trying to help the Juans, May, Judy Smiths, and other citizens of Florida to understand that good foods are one of the "keys" to better health.

Each person decides for himself what he is going to eat. Whether he has money to buy all the food he can eat - or utilizes a food assistance program, the kinds and amounts of foods he eats will determine his health, his well-being and his quality of life.

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Florida Department of Health and
Rehabilitative Services**

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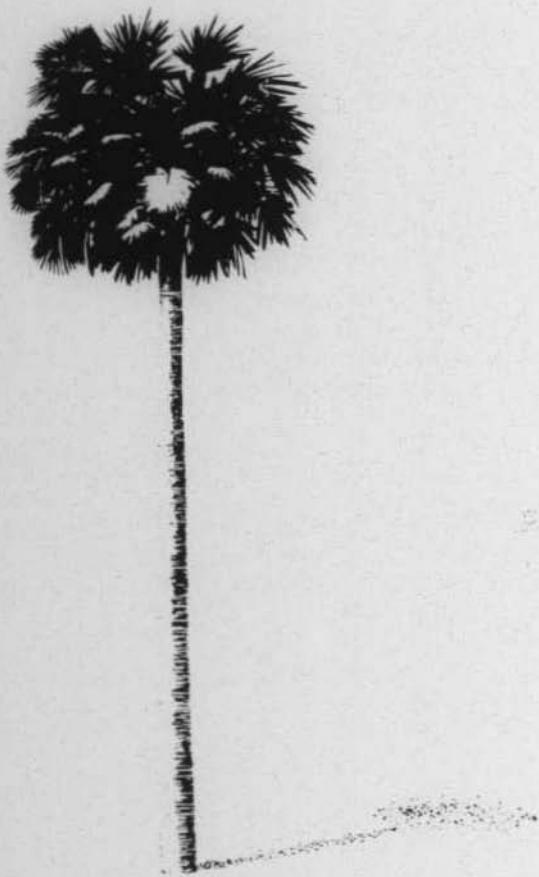
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FLORIDA HEALTH NOTES



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**A New Day
in
Public Health Nursing**

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A New Day

in Public Health Nursing

A new day begins in a Florida city. The sun peeks through the palms along the main street and glistens off the windows of the downtown office buildings. Chattering and singing mockingbirds flash through the live oaks. Traffic starts to increase along the boulevards circling the lakes.

Somewhere in this Florida city a baby is born. A diabetic gets up to give himself his daily dose of insulin. An elderly woman in a small house on a side street wakes, wishing that she had the strength to bathe herself. An ambulance races through the streets toward the hospital, bearing a middle-aged man who had just suffered a heart attack. A young mother rises to prepare a formula for her new born baby. A schoolchild says he feels sick but his mother decides that he should go to school. A public health nurse finishes her breakfast and prepares to venture into her community to serve the sick and helpless.

A new day has begun in Florida. A new day is also dawning for Florida's public health nursing. The role of the public health nurse, which was originally conceived to serve mothers and babies, and those with communicable diseases, is changing to include such fields as occupational and radiological nursing, drugs and narcotics, and special nursing conferences with well persons to promote good health and prevent disease.

To carry out these functions, public health nursing is becoming a team effort. While the professional public health nurse is being given more responsibility in providing health care for the people of Florida, a team of licensed practical nurses, clinic and home health aides, community workers and clerks is being developed to assist her.

This issue of **Florida Health Notes** is devoted to the changing role of the public health nurse, and it will explore the traditional functions performed yesterday and today by the nurse and contrast them with the new dimensions of the next decade.

help
keep
your child
healthy



(Cover photo) Present-day public health nurses assist the clinic's pediatrician in the examination of a baby. Tomorrow's public health nurse will play many new roles, including the screening of well babies so that only those with health problems will be seen by the doctor.

CLINIC AIDS - The public health nurse has several assistants. Clinic aides, who are part of the team, take temperatures, check blood pressures, and weigh expectant mothers and babies — among other duties.



Yesterday in Public Health Nursing

In the late 19th Century, public health nursing began in the tenements of New York City when nurses started visiting mothers and babies in the homes of the laboring population. The first three public health nurses in Florida were hired by Dr. Joseph Y. Porter, the first state health officer, in 1914, to visit tuberculosis patients in their homes. They were substitutes for the tuberculosis hospital the legislature had failed to finance at his request.

The first Florida public health nurses were successful. Two years later their number had increased to 13. Like the Canadian Mounted Police, they usually found their patients but they frequently had to walk or drive long distances to reach their patients. Sometimes a trip by rowboat was necessary. They sometimes had to face belated train schedules, poorly prepared food in out-of-the-way places, and uncomfortable sleeping accommodations.

World War I, budget cuts and the influenza epidemic strained the public health nursing program in Florida. The women were in demand to care for the wounded and sick. In 1921 a federal bill, the Sheppard-Towner Act, provided some funds for nursing services. The State Board of Health and Florida Federation of Women's Clubs invited the U.S. Public Health Service to undertake a study of child morbidity and mortality in the Sunshine State. As a result, the Bureau of Child Hygiene and Public Health Nursing was established in the State Board of Health. In 1931, public health nursing became a separate unit within the state agency.

Some 3,000 midwives were delivering babies in Florida at the time of the survey. Because there was no licensing or registering of midwives, the State Board of Health started a program to require midwives to obtain

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TRADITIONAL SERVICES — Public health nurses will continue to give such traditional nursing services as immunizations to Florida's babies.



"certificates of fitness." As the result of the establishment and enforcement of standards, some 500 midwives were reported to have withdrawn from practice.

The 1920's were not favorable for public health in Florida and public health nursing services were reduced by budget cuts. However, the 1930's saw the dawning of a more permanent public health nursing program as federal money made possible a generalized program to serve mothers, babies and schoolchildren. The midwife licensure law was passed in 1931 and a series of institutes were started by public health nursing consultants to improve the care of mothers and babies. Due to high maternal and infant death rates, there was special emphasis on prenatal and infant care programs with a provision for clinic services and home visits.

Duties of public health nurses in those days were to serve in clinics, make home visits, carry on surveys for hookworm, pellagra and other communicable diseases, serve in schools, check birth registrations, and cooperate with nurses from other state and voluntary health agencies.

World War II brought additional problems — venereal diseases and new tuberculosis cases. Clinics were expanded to assist in both programs; staff education was emphasized to assist local health departments in working with patients and families.

The evolution of public health nursing in recent years in part has been in response to the aged and those with chronic illnesses. One of the projects of public health nursing programs is improved care for the elderly in nursing homes. In this activity, public health nurses from the county health department have worked with sanitarians and physicians on inspection teams. They also have played a leading role in group instruction for nursing home administrators, nursing staffs and other personnel.

Today in Public Health Nursing

Today's functions of public health nurses are the result of years of practice and custom. Traditionally they are:

- supervision of maternity patients and infants;
- cooperation with boards of public instruction in the protection of the health of schoolchildren;
- the nursing care of the sick, chronically ill and aged at home;
- supervision of midwives and home health aides;
- rehabilitative exercises for patients who need them.

These nursing services are given under the written direction of physicians who make the diagnoses and prescribe the treatment to be given. But too few of the public health nurses are prepared to step into specialized fields and highly complex patient care activities.

Today's Help for Expectant Mothers

For many years the old "granny" midwives were the focus of the midwife program in Florida. Many old tales have been told of their practices but now the uneducated midwife who practiced in rural areas is being replaced by the nurse-midwife — a highly skilled and trained professional nurse who has special training in the prenatal, intrapartum and postpartum care of the mother's needs and those of her family.

In retrospect, the nurse-midwife has been around Florida for a long time. Her beginning came with the establishment of the supervision of

the Lay Midwife Program in 1931. Over the four decades since then, the use of the nurse-midwife has been limited. Her main duties were to supervise untrained midwives who practiced throughout the state, and under medical direction, brought a limited amount of skilled care to the mothers in isolated rural counties.

Due to the rising population and proportionately smaller numbers of obstetricians, the nurse-midwife can fill a rising need for maternity care in the state. They are a practical solution to the decreasing number of obstetricians.

Many people think the three or four days a woman spends in the hospital, at the time of delivery, are all the maternity care she needs. Public health nurses believe that Mrs. Florida Citizen should be preparing for motherhood from her youth — with proper nutrition and good hygiene. However, the nine-month period prior to the baby's arrival is the most important; equally so is the postpartum time, when the infant is trying to get a start in life and the mother is recovering from the delivery.

Nurse-midwives, in addition to being registered professional nurses, are educated in the theory and practices of modern obstetrics. They are able to cope with the patient's emotional, social and physical reactions to all phases of the maternity cycle.

The Division of Health knows that a great many women of the lower socioeconomic levels are receiving no or little prenatal care because of their inability to pay for medical supervision and delivery. Rising costs of medical care promise to make maternity care in hospitals inaccessible to a great number of women in the primary agricultural areas and in city slums. Existing public health clinics are filled to overflowing and physician vacancies on the staffs are unfilled.

The nurse-midwife is important to the patients in providing guidance, assistance and counseling in the home. She is an integral part of her service — serving as teacher, interpreter and the provider of support in times of crisis. One of the greatest gaps in maternity care is the lack of assistance or guidance available to the mother and father in the home after the baby is delivered.

The nurse-midwife increases the continuity of patient care. She is prepared to:

- care for the mother during pregnancy and stays with her in labor, providing continuous physical and emotional support;
- evaluate progress and manages the labor and delivery of normal births, always watching for signs requiring medical attention;

A Nurse-Midwife in Action

Mrs. V, a public health nurse-midwife, was returning from a visit to an expectant mother when she encountered Mrs. T, a former clinic patient who obviously needed help. The woman had had many babies and was again pregnant. When Mrs. V asked about medical attention, the woman admitted that she had not yet been to the clinic, although she was expecting her baby in about two months.

The nurse-midwife suspected that Mrs. T was reluctant to return to the clinic lest it be known that she was expecting her 11th child. (She had failed to keep her family planning clinic appointment, saying that she would not need the pill or the loop.)

Mrs. V found that this was true. She also learned that there were other problems influencing Mrs. T, like

- feeling sick, short of breath and tired;
- owing the hospital and not having money for clothes large enough to wear over a greatly-enlarged body; and
- having no tub for bathing and laundry.

Mrs. T had the unconscious thought that she need not face the facts of the coming baby for just a little longer, but when Mrs. V looked at the woman's swollen face, hands and feet and the grotesquely enlarged abdomen, she knew that the woman was too large for six and one-half months of pregnancy. She knew that something had to be done; that she was looking at symptoms of heart failure.

Mrs. V arranged for Mrs. T to be examined at the health department and at the same time planned for her to be transported to the hospital and admitted.

- evaluate the health condition of the newborn and provides immediate care;
- teach the mother to care for herself and for her infant;
- teach the family to adjust the home situation to the new child; and
- lay a healthy foundation for family planning and future pregnancies.

The nurse-midwife in Florida functions within the framework of a medically-directed health service: she is never an independent practitioner.



FILLS SPECIAL ROLE - The nurse-midwife, who examines and follows the progress of expectant mothers who are expecting normal deliveries, is a practical solution to the decreasing number of obstetricians in public health.

The story has a happy ending. Mrs. T was found to have heart failure and this was brought under control. Although the baby was small, born prematurely and required two blood transfusions, both mother and baby were safe and now receiving medical and nursing care.

It was all in a day's work for Mrs. V — but many things were accomplished. A mother was safely delivered; a baby salvaged; the mother had tubal ligation; good relations were established between the nurse-midwife and family; the father and husband was relieved of worry; the obstetrician at the hospital was appreciative and understanding; and Mrs. V received job satisfaction.

Today's Hospital Coordinator

One aspect of the public health nurse's work that provides much assistance for the people of Florida is the services given by the hospital coordinator. This nurse can be based in a hospital facility or in a county health department.

Mrs. B is a hospital coordinator employed in a Florida medical facility. She provides assistance with extended care, or any other service a patient may need after leaving the hospital. In some institutions, the coordinator work is combined with social worker's services. Many



FOLLOW-UP CARE - The hospital coordinator and nurse discuss with the patient's wife the nursing and medical care the patient will receive when he leaves the hospital. This special care will cut the length of hospitalization by several days.

A Family in Need

Mrs. B, a hospital coordinator, was called in on one case in which a patient was brought into the hospital emergency room. The patient was admitted to the medical facility with a lung abscess. The woman was upset because she had a sick husband at home; was indigent, and did not have the money to pay her bills.

Because it was too late in the day for a public health nurse to visit the home, Mrs. B made the home visit and found that someone had called an ambulance to take the husband to a hospital. She also called the county welfare office to try and obtain financial assistance for both husband and wife.

patients who are discharged from hospitals have someone who can watch over them while they are convalescing. However, many patients of all social and economic levels frequently need such services as part-time nursing, housekeeping, or instruction on how to care for a sick person, and do not know where to get such services.

The hospital coordinator tries to see the patients as soon as possible

after they are admitted to the hospital. Mrs. B says three-fourths of her referrals come from physicians. One physician may want to find out the food habits of a diabetic; another may want the hospital coordinator to find out something about the family relationships and social history of a mentally ill patient; others want to help the patient's family plan for care of the patient after his discharge from the hospital.

Supervisors and head nurses also refer patients to the coordinator who passes on to them information she obtains from patients that will help the nursing staff to plan for nursing care.

Once the hospital coordinator interviews the patient, she discusses follow-up care with the physician and a determination is made for care after discharge. She may refer the case to the public health nurse of the county health department or Visiting Nurse Association who will then know that Mr. Jones is going home from the hospital on a certain day and he will need home nursing care. The nurse will receive the physician's orders for the patient's care — which may be for treatment by a registered nurse or assistance by a home health aide. The hospital coordinator can also prepare the patient for the public health nurse's visit, thus cutting down on the nurse's preliminary work.

If the patient's family is uncertain as to what type of post-hospital care he needs, the hospital coordinator can assist the family in finding the most appropriate facility — which may be a nursing home under Medicaid or a boarding home. Transfers to facilities have been speeded up by coordinating the plan of care with the business office's discharge procedure.

Hospital coordinators like Mrs. B are not found in every Florida county, but their work can cut several days off the hospitalization of some patients.

Today's School Health Aide

The health supervision of children are basically the parents' responsibility, but during school hours, the children become the responsibility of the principal — who acts as a substitute parent. Decision concerning the child's health, however, still remains with the parent — even when the child is in school.

The school health program is legally and morally a joint responsibility of the Division of Health and Department of Education —

at the state level; and the boards of public instruction and county health departments — at the local level.

Teachers, through interest and training, are prepared to observe pupils for deviations from normal appearance and behavior. Public health nurses, according to the school health service contract, visit schools on a regular basis, thus creating a link between the school, student, home and community.

It is often asked, "Is it not advisable to have a full time professional nurse in schools?" Recent studies have indicated that caring for the relatively few sick or injured students found among a supposedly well group of children does not justify the employment of a full-time professional nurse. More than 50 per cent of her time would be involved in clerical work; only 10 to 20 per cent of her time would be needed to meet the health needs of the students.

A professional school nurse has no greater license to prescribe medicine or treatment than a lay person. On the other hand, she would be subject to pressure by uninformed persons to assume more responsibility for giving medications and other treatment to children than safe nursing procedure would allow.

Therefore, the schools are encouraged to have school health aides who provide traditional and routine first aid (as set by a policy of the county school administrator, local health officer and county medical and dental societies); make routine vision and hearing screening examinations, report any child who appears ill, and give comfort to the sick and injured.

HEALTH CARE - The health of schoolchildren is the concern of both the county health department and the school district. The public health nurse, the school health aide and the principal are all involved in providing health care in school.



The Sick Schoolchild

The most common complaint given by students who come to the health room is "I don't feel good!" followed by "I want to go home!" Questioning by the school health aide can usually bring out the response that Johnny has more specific complaints — such as a headache, sore throat, upset stomach, diarrhea, chills or fever. The school health aide will check his temperature. If there is no elevation, Johnny may be asked to lie down for a while and if he is no better, his parents will be notified. Johnny is not allowed to leave the school grounds, except when he is accompanied by his parents, or an adult designated by them — except when an emergency makes it necessary to transfer Johnny to the hospital, doctor's or dentist's office.

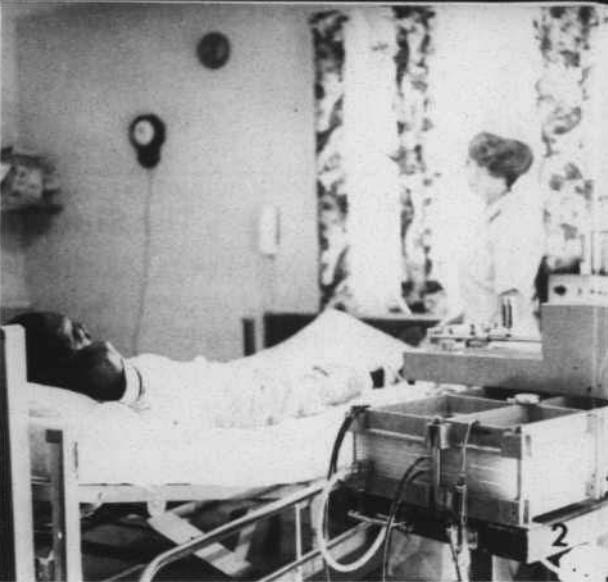
The school health aide is responsible to the public health nurse and the school principal. These professional people are also responsible for the recruiting and training of school health aides in their community.

Geriatric Nursing Today

Geriatric nursing becomes more significant as the population increases and as the average person lives longer. It is frequently said that most people over 65 have at least "one and a half chronic diseases."

Mr. Jacks needs instruction on how to administer insulin to himself; Mrs. Brown needs a catheter changed; Mrs. Jones needs rehabilitation treatment following a hip operation. Public health nurses can visit these senior citizens and help them to live more comfortable, healthier and happier lives. There are many advances in nursing procedures that help people cope with chronic diseases.





The Patient and the Artificial Kidney

There are a number of people with kidney failure in Florida who survive through the use of an artificial kidney. Some are treated in kidney centers; some are treated at home. Most of them live nearly normal lives with a few necessary restrictions. None could survive without their two or three treatments a week with the artificial kidney.

Mr. N, who lives in a Florida city, is such a person. Despite his disability he is an active person. He teaches biology in a senior high school, goes fishing, and on trips. Twice a week in summer and three times a week in the cooler months, Mr. N, with the assistance of his wife (who is his partner in more ways than one) attaches himself to the artificial kidney for 10 to 12-hour periods.

From a small tube permanently implanted in an artery in his leg, Mr. N's blood enters the artificial kidney where it flows through cellophane sheets. Wastes from the blood passes through the millions of invisible pores in the cellophane to the cleansing solution called "dialysate" which flows on the opposite side of the cellophane.

The cleansed blood comes back into Mr. N's body through another plastic tube implanted in a vein, completing the circuit. It is the implanted plastic tube apparatus, called a "cannula shunt" that makes possible the repeated connection of Mr. N to the machine.

Cardiac patients are being hospitalized for shorter periods of time. Roger Price was struck by a massive heart attack. He was able to return



THE ARTIFICIAL KIDNEY - The use of the artificial kidney in the home is a departure from traditional medical practice. Even though the public health nurse does not give direct nursing care, she can give support and encouragement to the patient and his family (1 and 2). The patient, with the assistance of his wife, disconnects himself from the complicated artificial kidney (3). The wife sterilizes a sheet of cellophane through which the blood of her husband flows during the cleansing process (4).

Several months were spent by Mr. N in a kidney center where he learned how to attach himself and regulate the machine and the amount of clotting material added to the blood. His wife also learned how to disassemble the artificial kidney, sterilize the parts and rebuild the machine. The technical aspects of such an operation are those once carried on only by highly-trained physicians. The public health nurse, while not playing a part in the therapy, helps the family by giving advice and support, by watching for signs of trouble or deterioration.

Mr. N is extremely aware of the preciousness of life, the dependency upon the machine, and the limited, restricted diet which governs his life. High protein foods, such as meat, eggs and cereals, can be eaten only in small quantities; salt and liquid intake must be carefully watched. Vacations include stop-overs at kidney centers for treatments. His children are aware of their father's condition and they assist with household duties. The older child even helps assemble the machine for his father's therapy.

home from the hospital much sooner because public health nurses were available to advise him on the special diet and exercise ordered by his

physician. He was able to return to work sooner because he continued under the surveillance of the public health nurse and/or industrial nurse.

Diabetes and the teaching and supervision of diabetic patients have become the particular province of public health nurses. In this area, the public health nurse works with the nutritionist in assisting the patient to understand and accept the diet for the control of the disease. The public health nurse advises the patient and his family on how to live longer, fuller lives. The public health nurse gives moral support to the patient and his family, listens to their problems, and helps them over rough spots in their lives.

For the young diabetic, the public health nurse combines forces with teachers and school counselors to prevent or manage emergency situations involving the diabetic child.

Patients with emphysema and chronic respiratory conditions often come to the health clinics for treatment and rely on the public health nurse for encouragement, counseling and care.

The list of chronic disease sufferers who receive care from public health nurses is unlimited, but includes patients with these diseases, epileptic children in school (or adults in the community), arthritics in the home, and cancer patients — each with his own special problem.

Perhaps one of the most radical departures from traditional medical practice, and the most exciting to the public health nurse is the kidney failure patient who has brought his artificial kidney home. Here the public health nurse can offer support and encouragement to the patient and his family. She is the resource person who is alert for signs of difficulty and ready to make a referral to the appropriate person or agency. When the family needs help with the diet, the public health nurse will refer them to a nutritionist or dietitian.

The public health nurse can assist the kidney dialysis patient and his family to adopt to everyday living activities that will differ somewhat from the past. Although they live active and nearly-normal lives, they do have to respect certain restrictions. From time to time, they may need reinforcement, interpretation or encouragement to maintain their individual independence. The public health nurse needs to be alert to signs of anxiety or psychological problems that stem from the constant reminder of serious chronic disease. Perhaps, the nurse can help by merely agreeing with the patient that his "diet tastes terrible," but it is a necessary part of his existence.

COMMUNITY NURSING SERVICE -

A public health nurse pays a visit to a child who was paralyzed by an accident. In addition to giving skilled nursing care, the public health nurse serves as counselor to the family.



Today's Community Nursing Services

Most of Florida's 67 counties provide home nursing service for people who need it. These services are provided by nurses from county health departments, Visiting Nurse Associations, or other organizations or agencies certified by the Social Security Administration on the recommendations of the Division of Health. A great amount of time is spent in providing nursing care to patients under the Medicare program, which gave impetus to home health nursing services.

Some of the agencies receive funds from poverty programs to employ home health aides from low income families. Some agencies also have contracts with private, voluntary health organizations or county hospitals to do follow-up of patients who have been discharged from the hospital. Visiting Nurse Associations also receive funds from Community Chests or United Fund to help carry on their work. Some agencies, both private and governmental, receive payment from patients — according to their ability to pay.

The public health nurse receives referrals from a number of sources — a hospital coordinator, a friend of the family of the patient, or a physician. In every case she goes to see the patient at the request of the

physician and gives the care prescribed in the medical plan of treatment. The public health nurse gives skilled nursing care.

The professional public health nurse's services are augmented by the work of the licensed practical nurse who does some of the same nursing procedures as the professional registered nurse, but she does not make judgements or evaluate nursing care. She:

- evaluates and regularly re-evaluates the nursing needs of the patient;
- develops and carries out the nursing care plan;
- provides treatment and diagnostic and preventive procedures which require specialized skill;
- initiates preventive and rehabilitative procedures appropriate to the patient's care and safety;
- observes signs and symptoms of change in the patient's condition and reports these to the physician;
- teaches, supervises and counsels the patient and his family regarding care and related problems during her absences; and
- trains and supervises other nursing service personnel.

PERSONAL CARE - A home health aide gives a 103-year-old man daily care that does not require the professional skills of a public health nurse.



The Patient Who Walked

Many home health aides have brought many patients "back to the land of the living." One obese patient had been bed-ridden two years with leg contractions. A home health aide was assigned to the patient for four hours a day, five days a week. Sometime later, the aide's supervisor received a call from the aide. "Please come over." When the supervisor arrived, the patient was sitting in a chair. Through a program of inspiration, motivation, and with pulleys, etc., the home health aide had gotten the patient to the point where she could get out of bed. Later, the woman was able to sit in a wheelchair and to leave her bedroom for the first time in years.

The public health nurse does a great deal of health education, instructing the well members of the family to care for the sick person. While families cannot do nursing procedures such as complete treatment, they can be taught the proper way to change linens on a bed, carry on safety measures, position the patient in bed to prevent bed sores, check the signs of a change in a patient's condition, and call the nurse and physician if they are needed.

Today's Home Health Aides

The home health aide is an extension of nursing service that has found favor with doctors, nurses and patients. Most of the home health aides are mature women who get much satisfaction from their work.

The home health aide is trained to help patients with baths, give personal care, assist the patient in and out of bed and with ambulation, help the patient with prescribed exercises which the home health aide has been taught, assist with medication that is ordinarily self-administered, perform incidental household chores, such as preparing meals; and report to the public health nurse any gross change in the patient's condition.

Sometimes the home health aide can communicate with a patient when the doctor and public health nurse has failed. One home health aide sensed that something was wrong in a home — that the woman and her children were frightened. Finally, the aide was able to find out that the

woman had been severely beaten and communicated this information to the public health nurse and authorities.

Health officials have also found that the home health aides can assist patients when they have to go to the clinics. They can interpret the special needs of the patient and situation in the home to the physician — sometimes better than the patient. They can also help the patient to understand the doctor's or nurse's instructions.

When home health aides work with low income families, they can help keep families together, keep children in school (who would otherwise have to stay home to take care of a sick parent), and teach the youngsters in the family good health habits.

Home health aides are specially screened for their work. They are trained in 60-hour courses by local physicians and public health nurses in bedside care, home management, nutrition, maternal and child health, problems of geriatrics, and positioning and assisting of patients. They are also given instruction according to the individuals they are going to serve.

Tomorrow's Public Health Services

Traditionally, public health clinics and services were available during business hours of 8 to 5 o'clock. Special clinics were set to a rigid schedule: immunizations, prenatal and baby clinics were set on certain days and there were no mixing of services.

However, the public health nurses are beginning to give services to people at times and places convenient to the patient. Traditional hours are not put ahead of the patient's (or consumer's) interest.

County health departments are already holding numerous evening and Saturday clinics. One local health clinic is conducted on Saturday evening for the convenience of those people who cannot come at any other time.

These evening and weekend clinics will hopefully bring out the inactive nurses who can spare a few hours to serve in the clinics on a fee basis. These nurses also can be "on call" to give nursing care in the home when the need arises. Nurses who can work a few hours a week will relieve the staff public health nurses who must necessarily be given compensatory time for the evening hours they work.

TEAM MEMBER - The clinic's clerk is an important member of the county health department team. She keeps records, supervises the great amount of paperwork and frees the public health nurse from many activities that do not require professional knowledge and skills.



The evening clinics do not reduce the daytime clinic loads. Many people work during the day and during traditional clinic hours. Now they can come to health departments where they receive assistance in family planning, maternity, immunization, venereal disease and general clinics.

Today and Tomorrow - The Team Approach

The first county health departments were set up with a county health officer, sanitarian, public health nurse and clerk. Many of the smaller county health departments still operate with a staff similar to the original set-up. However, in the larger counties, the sheer numbers of people seeking services require the team approach to providing nursing services.

Public health nurses are carefully examining current practices in relation to the problems and needs in the community today. This is an effort to clearly define the problems and to determine the type, or level, of personnel needed to provide nursing services.

Nursing teams are being developed in Florida in which the public health nurse will give direct services only when the skills of the

professional nurse are required. As the condition of the patient, or level of service, permits, less qualified personnel can be used.

Heading the nursing service team is the nursing director and/or supervisor who may help set nursing policies, advise the nursing staff on procedures and plans related to the work, and work as liaison with other professional people. Her duties are varied and complex.

The public health nurse serves the patient in the clinics and at home. She is a co-worker with the physician in clinics, helps maintain records of treatment, interprets the doctor's recommendations to the individual and gives follow-up service to see that the patient is improved. Among other duties she gives demonstrations and lectures before schools and community groups, and serves as advisor to student affiliates, trainees and other team personnel.

The licensed practical nurse who works in the county health department performs duties similar to the public health nurse but does not make professional judgements. She can give prescribed medications designated by the public health nurse, perform simple rehabilitative nursing duties, assist professional nurses and doctors in diagnostic testings and physical examinations.

The home health aide attached to the county health department may double as a clinic aide, or she may be assigned only to the clinic. She sets up the clinic, weighs patients, takes temperatures and blood pressures, and assists physicians in the examination of patients. She also cleans up a clinic examining room after the patient.

One of the important individuals on the public health nursing team is the clerk. Public health nurses recognize that without the assistance of the clerk, the clinics would be chaos or confusion. The clerk keeps the patients' records, registers the incoming patients, pulls their records, and supervises the great amount of paperwork involved. The physicians and nurses write out or put on tape their orders for patient care and these the clerk neatly types out for the files. More clerical personnel will be used to free the public health nurse from those activities which do not require her professional knowledge, skills or time.

Adequate supervision is vital to all work levels of the team to insure safe, effective nursing service.

The Need for Continuing Education

Since the delivery of health services will continue to change, the public health nurse must keep up to date. One way she does this is to read various professional journals and other appropriate references. In addition, she must attend educational programs to learn about new methods, new equipment, new drugs and new techniques. These programs are available through her own county health department or agency; or through voluntary associations, such as heart, cancer and tuberculosis; or through her own professional association. In addition, junior and senior colleges offer short courses that are designed to help her improve and enlarge her scope of service.

Although the public health nurse is a registered nurse, she continues her education throughout her career. Sometimes, this is in the form of study, in a university school of nursing on a baccalaureate or master's level. If she is graduated from a junior college or hospital school of nursing, she must take a six-week orientation course when she enters public health. The larger county health departments conduct their own orientation programs. When employed in a smaller health department, the nurse attends the course at one of the field teaching centers.

In addition, all public health nurses attend in-service education programs on a regular basis. Again, larger county health departments conduct their own programs; the smaller units band together in groups of eight or ten units for their programs.

The Public Health Nursing Section of the Division of Health helps to coordinate these study groups. The Section also conducts throughout the state special educational programs as requested by the public health nurses. In addition, the Section works with other agencies and groups as they plan study sessions for the public health nurses.

One example of a university-based short course for public health nurses is a "well-baby care training" program at the University of Florida. The course is concerned with the supervision and care of predominately well children during the first year of life. Public health nurses attend the course one day a week over a two-month period. The nurses learn normal growth and development patterns of children and the major deviations from these patterns. A list of symptoms of diseases is also developed so the public health nurses will recognize departures from the normal patterns that they can handle and what should be referred immediately to physicians or could be seen by doctors at some future time.

The Public Health Nurse's Changing Role

Health care and services are in the midst of a crisis in the United States. For many years the duties of the nurse have been confined by legal restrictions and customs. Every nurse learns this early in her experience as a student.

In the past several years, significant changes have occurred in nursing practice. Nursing care is given more and more by specialists in short, intensive periods in hospitals, and in long-term, follow-up periods in the home or extended care facilities. Specialists have been developed in such clinical areas as coronary care, neurology, renal disorders, kidney dialysis, midwifery, and rehabilitation therapy. There are also changes within the traditional categories of patient care — pediatrics, geriatrics, care of the chronically ill, intensive care, and rehabilitation care.

New and broader nursing roles are emerging in out-of-hospital areas, such as in community and neighborhood health centers, school health, and in programs aimed at prevention of illness and maintenance of health — areas where health services have been neglected.

The changing role of the nurse is not in conflict with the physician's, but increasingly in collaboration with the physician. The nurse has always worked closely with the physician and has traditionally carried out therapeutic and preventive orders prescribed by the doctor, interpreting to the patient the plan for his care. The nurse also has interpreted to the doctor the needs of the patient.

In response to the increasing pressure of patient load, experiments have been carried out which show that especially prepared individuals who serve as "physician's assistant" have worked in carefully selected situations. These persons, prepared at an advanced level, would serve patients directly while in continuous communications with the physician for consultation and direction. Many health officials feel the registered nurse is the obvious source of so-called "physician's assistant." Nurses are currently being prepared to fill specialized roles in such fields as midwifery, pediatrics and geriatrics.

However, the physician-nurse relationship can be developed more effectively as an inter-professional relationship for comprehensive patient care. Together they can share the responsibilities and yet function as experts in their own particular field.



FAMILY PLANNING - Education is a big part of the public health nurse's role. Included is the instructing of women in the use of child spacing devices and pills.

A New Day in Florida's Public Health Nursing

In 1970, public health nursing in Florida is assessing its contribution to the health care of the individual, families and the community as it has never done before. It has a long and honorable tradition. Much is heard in health and medical circles of the "new role" for nurses, with evidence that there will be delegation of increasingly greater responsibilities to them. The traditional roles in public health nursing are still important, but nursing will assume many new dimensions in the next decade.

The practice of nursing will include many activities and procedures formerly done by physicians. Nursing interviews, appraisals and evaluations will probably replace the well baby clinics in the county health departments. Nurses with special preparation in child health will make complete appraisals and refer only the infant or child who is suspected of having a health problem to the physician.

The same type of screening will be supervised by public health nurses on all age groups, and include tests for glaucoma, vision, hearing, diabetes, high blood pressure, pap smear for cancer, tuberculosis, urine and stool tests.

The growing shortage of obstetricians means that the nurse-midwife will be a partial, practical solution. They are qualified to give overall care to normal patients from the beginning of pregnancy through the postpartum period.

The need for care by persons with long-term illnesses is becoming the Number One health problem in Florida. The public health nurse can play a big part as the bridge between the hospitals and the home and community, across which the patient can move with confidence.

The traditional hours of public health nurses prevent a "family-centered" service. Most of the time the public health nurse does not know the husband or father of the family unless he happens to be ill himself. This fact, plus the fact that many mothers work outside the home, may mean that public health nursing services will be available on "around-the-clock" basis. Patients who need periodical nursing care, such as an injection every eight hours, and general observation, may be seen in the clinics without having to go into a hospital.

Public health nurses will become more involved in services to alcoholics and drug addicts and their families, and will be increasingly available on a part-time, or hourly, basis to small industries.

Planning for delivery of health services on the state and local level will in the future involve public health nurses — both in the initial planning and the implementation of the services.

The Division of Health has aimed at a ratio of one public health nurse to 5,000 persons for the traditional public health service, and one nurse to 3,500 when nursing care of the sick at home is included in the program. To approach this highly desirable goal, Florida now needs 750 additional nurses. By 1975, the goal will reach 2,132 nurses; and with the expanding population, it will be 2,537 nurses in 1980. The health agencies have fewer than one thousand at the present time.

The sun will peek through the palms of that Florida city tomorrow. Mockingbirds will still be singing. Traffic will be a little thicker.

The child that is born may be delivered under the watchful eye of a nurse-midwife. The elderly woman will anticipate the assistance of the home health aide. The middle-aged man with the heart attack will soon realize that the public health nursing team will help him to recover more rapidly.

The public health nurse will know that she will be able to serve more people in her official capacity because of the changing role of public health nursing.

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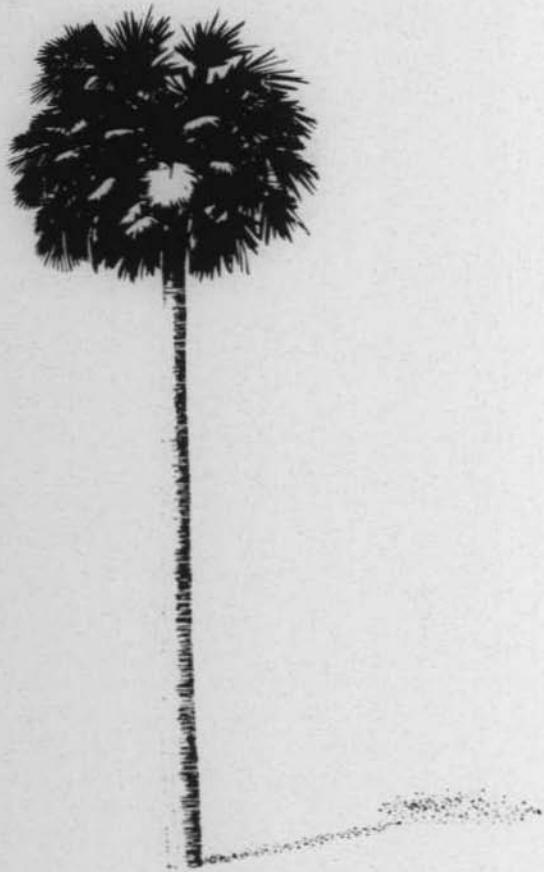
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FLORIDA HEALTH NOTES



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CONGENITAL DEFECTS

LEARNING TO WALK (Cover photo) - A child with multiple congenital defects struggles through a few steps with the assistance of a physical therapist.



UNHAPPY - An unwilling patient has his height measured at a birth defect center.

CONGENITAL DEFECTS

Do you remember asking expectant parents, "What do want? A boy or a girl?" and they would give their choices. The man frequently would say, "I want a boy!" The woman would reply, "I want a girl!"

When you ask the same question today, expectant parents answer, "We don't care what it is — just so it's healthy and well."

People are becoming more aware of congenital defects. They are more concerned that their children be normal and healthy.

But what are your chances of having a normal child? Or a defective child? National statistics show that one out of 16 children born in the United States has some form of defect. One family in 10 is touched with this tragedy. According to the National Foundation-March of Dimes, every second child in hospitals for treatments is there because of birth defects. One quarter of a million of the children born each year in this country have congenital defects.

What form do these congenital defects take? Some are obvious, such as extra toes or fingers, mongolism, missing limbs or conjoined ("Siamese") twins. Also, there are at least 200 inborn errors of metabolism, hidden defects of body chemistry; and one or more of these can appear in a child. These may result in diabetes, blood diseases, such as Rh factor incompatibility or sickle cell anemia, and mental retardation.

There are more - many more - kinds of defects. Whatever form a serious birth defect takes - and there are hundreds of possibilities - blighted minds and bodies and lives result. The pain and frustration for the child, the anguish of its parents, the cost to society in terms of wasted human potential and custodial care constitute a health problem that affects us all. Of the 100,760 children born in Florida in 1968, medical authorities estimate that about 7,000 of these had birth defects and 9,200 were born prematurely.

The Florida Department of Health and Rehabilitative Services, the Division of Health and county health departments, through maternal and child health programs are interested in preventing congenital defects

before they occur. Other state agencies, such as the Bureau of Crippled Children of the Department of Health and Rehabilitative Services' Division of Vocational Rehabilitation; and voluntary health agencies, such as the Florida Easter Seal Society, the United Cerebral Palsy Associations, the National Cystic Fibrosis Research Foundation, and National Foundation-March of Dimes contribute to rehabilitation of these youngsters, research, and education of the public.

This issue of **Florida Health Notes** will tell you about some of the congenital defects; what causes them; what can be done to prevent them; and what is being done for those children who are born with defects.

What are Congenital Defects?

A congenital defect is an abnormality in a baby at birth. Another term is "birth defect."

"Birth defect" refers to abnormalities of newborn babies caused by heredity, by disease, or by something else that affects the child during development before it is born or during birth.

"Congenital" simply means "present at birth." A congenital defect is an abnormality or mistake in the body formation which is there when the baby is born, but which did not result from injury during the process of birth.

Even though a hereditary condition may not show up until late in life, the defect responsible for it is actually present in the baby at birth.

These defects are mistakes in body formation or function that happens as a baby comes into being. They may be caused by heredity, by

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disease, or by something that happens to the infant while it grows in the mother's womb — in its prenatal environment. Many times, heredity and environment work together to produce a defective child.

So great is human variation that a precise definition of "abnormality" is difficult. It is generally understood to be anything present at birth that will deprive a child of physical or mental well-being. There are defects that take lives; defects that cause physical incapacities or chronic diseases; defects that disfigure; and defects that impair the mind.

Some defects are so slight that they are but minor inconveniences. Color blindness, for example, usually means only that the individual cannot tell red from green. A child born with an extra finger suffers no great difficulty — usually surgical removal is fairly simple.

On the other hand, a child born with a rudimentary head or multiple defects involving many organs dies almost at once — or may linger close to death for some time, unable to care for itself.

Between these extremes are many defects that rob life of its fullness or shorten its length. There is the dwarf, the baby with the cleft lip and palate, and the newborn with a shortened arm or leg, or a missing hand — examples of errors in anatomical structures of the body. There is the child with diabetes, the baby with cystic fibrosis, or the boy with muscular dystrophy — examples of abnormalities in body chemistry.

All of these are birth defects. So are congenital heart and kidney defects and blood disorders like the one that plagues the hemophiliac.

There are intellectual impairments, too. Mongolism (Down's Syndrome) is perhaps the most familiar. Probably half of the mental retardation in the United States is caused by birth defects.

There are other serious consequences: the loss of babies which are aborted or stillborn because they are so severely abnormal that life cannot continue.

People are interested in birth defects. Organizations and societies have been formed to combat such diseases as hemophilia, cystic fibrosis, cerebral palsy and heart disease. These organizations raise money to support research and to aid patients with treatment.



BEGINNING LIFE -

A prematurely - born baby is placed in a nursery incubator at one of Florida's birth defects centers.

Causes of Birth Defects

There are hundreds of different birth defects. One list includes more than a thousand. The causes are many and complex and most of them are not well understood. Some birth defects can be blamed on heredity alone; but probably no more than 20 per cent can be blamed on genetic traits contributed by one or both parents which cause the abnormal condition or disease in the child.

Another 20 per cent or so of the birth defects is due to something in the environment of the baby that affects it while it is developing inside the mother. For example, the drug thalidomide, or LSD, taken by the mother, or infection of the mother by German measles (rubella) at certain stages of pregnancy may have disastrous effects on the unborn baby.

Heredity and environment work together to cause the great majority of birth defects. Just as heredity can make some people allergic to pollens and drugs, and not other people; so apparently, an unborn

baby's inheritance makes it susceptible to outside influence. The same influence may have no effect on other babies with different inheritance. This illustrates how difficult it is to determine the causes of birth defects and measures to prevent them.

Chemical Code of Life

We have said that heredity influences the newly-formed infant — both the normal child or the abnormal. Just how does this heredity work?

Every human life starts as a fertilized egg; a fusing of the two cells, male and female, which grows to be a collection of billions of cells called a baby. The astounding growth process which provides the precise anatomical structure and appearance of the baby's body - plus apparatus for all the ongoing chemical functions of living is under the control and direction of a particular chemical known as DNA (deoxyribonucleic acid). DNA is a storehouse of coded information; it acts as a code for life much as a programmed tape does for a computer.

A baby's DNA code, as individual as a fingerprint, comes through the union of its parents' DNA from the sperm and egg. It is transmitted from generation to generation in hereditary units called "genes." These are passed by cell division to other cells of the body. The genes are in turn packaged together in larger units, called chromosomes, which are found in the nucleus of every cell.

Hereditary birth defects can arise from a "bad" gene inherited from one or both parents; or from a chromosome error involving one or more genes. All normal human cells contain 46 chromosomes in pairs — except the reproductive cells (egg and sperm). Each egg and sperm cell contains only half that number - 23 - so that when a sperm enters an egg the proper number of 46 will be restored in the fertilized egg. This is the beginning of new life.

During the complicated process which ends up in the formation of a special reproductive cell — which should have only 23 chromosomes, sometimes a mistake takes place and the cell may have too many chromosomes, too few, or perhaps a broken chromosome. If either the egg or sperm that unite to make the new baby is defective, the chromosome error (involving a whole bundle of genetic code of life material) will be reproduced in all of the baby's cells.

Abnormal chromosomes can lead to major birth defects. The best known is mongolism. Babies with this birth defect usually have an extra chromosome. A number of other major defects have been found associated with chromosome abnormalities.

A hereditary defect can involve a single gene, rather than a whole chromosome, and this, too, can have dire consequences. A baby born with a "bad" gene may have a missing, defective, or inactive enzyme which can trigger an abnormal reaction in body chemistry. Just as one car can cause a massive traffic jam on the expressway, one defective enzyme can cause a mammoth chemical blockade in the body.

The Environment of the Unborn Baby

The womb of the mother which holds the baby is not always the safe place one might suspect. Viruses, drugs, radiation and injuries can have a disastrous affect upon the unborn baby. The baby being carried inside its mother is susceptible to different kinds of dangers at different stages of its development. If a defect-causing agent reaches the baby just when its eyebuds are forming, blindness may occur. When the ears and hearing apparatus are being put together, the same agent may cause deafness. An unsafe drug taken during the time the legs or arms are being formed may cause deformed limbs.

So many factors are at work in the growth of a single fertilized ovum to a nine-month, full-term baby that the problems involved in discovering the cause of a certain defect at a given time are extraordinarily complex. One thing is certain: during the early weeks of pregnancy, the basic, and therefore most critical steps in the growth of the new baby are taking place. This is when it is most susceptible to damaging influences. This is also the time when mothers may not suspect that they are pregnant.

The presumed environmental dangers that affect the unborn child fall into three main categories:

Viruses (minute infectious agents) - Rubella can cause such abnormalities as cataracts, deafness, heart defects, and mental retardation. Infections by salivary gland virus, and toxoplasma (not a virus but a parasitic organism) which cause minor or inapparent disease in pregnant women, can produce multiple and serious defects in their

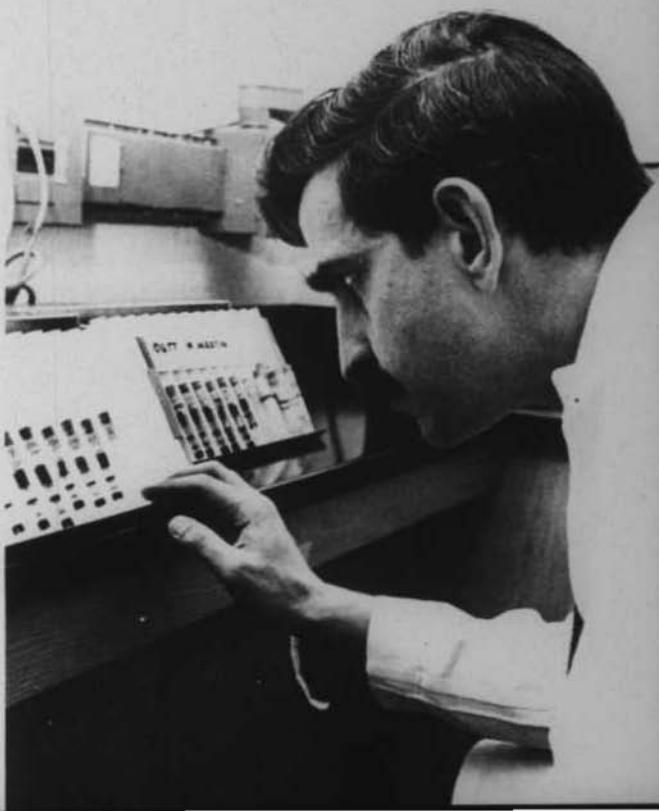
unborn babies. Mumps and other viruses are known to cross the placental barrier, but how much harm they do is not as well known.

Drugs - The thalidomide tragedy, in which a sleeping pill caused major malformation in infants, raised the red flag against possible dangers of drug-taking during pregnancy. Female narcotic addicts often produce premature or stillborn babies. While narcotics do not cause congenital defects, such substances when used by a pregnant woman can poison her unborn baby. If a woman is a narcotic user shortly before delivery, her baby can suffer all of the tortures of withdrawal soon after birth. The infant does not have a great physical reserve and it may not survive — unless given expert care.

Radiation - X-rays, even in small amounts, striking the abdomen or pelvis at certain times during pregnancy may injure the baby. Such examinations should be made only when the needed health information warrants the risk to the unborn child. Excessive irradiation, even prior to conception, may affect male and female cells and result in imperfect babies.

Other environmental factors, such as diet and general health of the mother, also play a major role in birth defects.

RESEARCH - A physician at the University of Florida's J. Hillis Miller Health Center examines samples of blood serum used in the detection of diabetes in children.



Types of Birth Defects

Defective births have been recorded in the most ancient documents. Dwarfs appeared in Egyptian paintings and sculptures made 5,000 years ago. A cleft palate was found in a mummy. One Pharaoh was known to have had a clubfoot.

When people see something unusual, but do not understand its cause, they often make up their own explanations which may have no basis in fact. So it has been with birth defects. The Babylonian priests catalogued more than 60 deformities of the ear, nose, mouth, sex organs, and limbs (all recognized abnormalities today), and used them to foretell the future.

Birth defects are always associated with superstition and magic. Early man, without the understanding of the reason for such defects, laid the blame on dealings with evil spirits, parents' behavior, or exposure of the pregnant woman to extraordinary circumstances. When a child was born with a hare lip, its mother was often thought to have been frightened during pregnancy by a hare (rabbit). The noted conjoined (or Siamese) twins, Eng and Chang Bunker, who were made famous by P. T. Barnum's side shows, were forbidden to tour France on the grounds that they might cause monsters to be born to Frenchwomen who chanced to read about or see them. For years the impression prevailed that outside incidents affecting the mother might bring forth a great musician, a mathematician or leader in some profession.



CONJOINED TWINS - Medical men are interested in the rare conjoined twins. At left is a drawing of the Siamese twins, Eng and Chang Bunker, who were exhibited by P.T. Barnum; below is an illustration of a congenital defect from early medical writings.



From time to time, various pragmatists and philosophers have suggested that defective children be destroyed or permitted to die when discovered at birth. Others have insisted that studies be made to detect damage of the fetus and that these children be followed by efforts to prevent birth of future damaged infants. Obviously the latter view has persisted because children who would formerly have died in early youth now grow to well-advanced ages.

There are many types of birth defects under study. It would be impossible to list all of them but following are some of the major ones.

Extra fingers or toes may be hereditary in some cases. Amputation of extra fingers or toes can be done quite simply shortly after birth. When digits are webbed, fused or missing, reconstructive surgery may be needed to improve the function of the hand or foot.

Hearing loss, whether total or partial, may be caused by defects of the external auditory canal, the middle or inner ear, the auditory nerve, or the brain. Many kinds of congenital deafness can be helped by early detection and use of hearing aids. Speech therapy is often required to enable these children to communicate normally.

Visual defects include partial and total loss of sight. Some visual defects, such as crossed eyes, are relatively easy to correct. Others, involving the lens or other parts of the eye present greater problems. Not all can be corrected.

Chromosomal abnormalities are associated with a wide range of physical and mental birth defects.

Cystic fibrosis is an inherited disease best known for symptoms related to the respiratory and digestive systems although it involves many tissues. It occurs in about one out of a thousand children. The condition is transmitted by a defective gene in the parents and affects the sweat, mucus and salivary glands. The sweat glands produce salty sweat; other glands function improperly; an abnormal, thick, gluey mucus is secreted which clogs the lungs causing breathing difficulties and infections.

Missing limbs are not very rare. The child may be born with one to four limbs absent or seriously deformed at birth. Great advances in the development of artificial arms and legs have helped these children achieve some independence. Emotional problems of affected children and their problems are great but can be overcome.

Clubfoot occurs in about one of every 250 births. Shortened ligaments hold the bones of the foot in an abnormal position. Treatment by surgery or corrective plaster casts to lengthen ligaments and realign bones must begin soon after birth to prevent lifelong crippling.

Defective internal organs, once considered fatal, are often corrected today by advanced techniques in pediatric surgery for newborn infants. A child born with intestines outside his body, can be completely normal after surgery replaces the organs and closes his abdominal wall.

Sickle cell anemia is one of several inherited blood disorders. When a person inherits the sickling gene from one parent, he may be clinically normal except under times of extreme oxygen stress. A baby which inherits the gene from both parents may from childhood have serious and eventually fatal anemia.

Birthmarks are common and may range from insignificant to badly disfiguring patches composed of numerous small dilated blood vessels. Some of these marks will disappear in a few years without treatment. Plastic surgeons can remove many birthmarks, using skin grafts or tattooing normal skin colors over reddish or purple areas.

Dwarfism is a familiar example of a skeletal defect which affects victims throughout their lives. Studies are being made of hereditary and medical problems of dwarfs, and of the value of growth hormones for pre-adolescent midgets who are normally proportioned but lack the hormones essential for growth.

Open spine (spina bifida) afflicts one out of every 500 babies, who often become victims of fatal infections, or survive with paralysis. Surgery soon after birth can often prevent some complications, alleviate others. But when the spinal cord or nerves protrude through the spinal column, there may be paralysis of the legs, bowels or bladder. Other defects often accompany spina bifida in the same child.

Hydrocephalus (water on the brain) results from excessive cerebrospinal fluid or obstruction of the flow of fluid, causing enlargement of the head and pressure on the brain. This condition results in mental retardation, blindness or death. Hydrocephalics can be given a "shunt" operation to drain off excess fluids from inside the skull.

Cleft lip afflicts about one in every 1,000 babies. Some 70 per cent of these also have cleft palates. Plastic surgery, begun shortly after birth, can correct the cleft lip and palate. Speech therapy is often required.

Heart defects afflict more than 20,000 babies in the United States

each year. Some 80 per cent can be relieved or cured by surgery or other improved treatment.

Diabetes is one of the most common hereditary metabolic defects. Some types of diabetes strike in infancy or childhood, but most show up when the person is 40 years of age or older. The basic problem is that the body of the diabetic does not assimilate sugar as readily as the nondiabetic. Diabetes can result in complications involving the circulatory system and affecting the brain, eyes, heart, kidney and legs - even under modern treatment. Special diets and medications can effectively control this disease.

Mongolism (Down's syndrome) afflicts one in every 600 babies, and is associated with a chromosomal error, resulting in mental retardation and other defects. Studies have shown that the chances of having a mongoloid baby increases if the mother is 35 years of age or older. There is no known cure, but training can help the children to be self-sufficient.

Mental retardation can be caused by genetic errors or by maternal diseases during pregnancy. Some body chemistry errors, such as that in phenylketonuris (PKU) can be treated by diet begun shortly after birth. Rubella (German measles), which can cause brain damage in unborn babies, can be prevented by the use of a new vaccine.

What Can Be Done?

Too frequently people feel that birth defects are something that occur and nothing can be done about them. The guilt and shame so often felt by the parents of a child with a defect is a hangover from those by-gone days when a defective child was thought to be God's punishment. Mothers and fathers sometimes are overwhelmed by the fact that they are morally responsible for the care of their child - particularly when the cause of the defect is unknown.

No couple should try to face such a tragedy alone; parents of children with birth defects need help and understanding for themselves, as well for their boy or girl. The guidance of a minister or counselor is often beneficial — and as necessary — as the dedication and skill of a sympathetic physician.

What can be done for a child with a defect?

A great deal more can be done than most people realize. Unless there is irreversible damage to a vital organ, it is nearly always possible to control the disease, repair the damage, or in some way restore the child to fairly good health and a creative life.

Of course, many birth defects are fatal. Each year they destroy some 500,000 babies in the United States before they are born; and they cause the death of at least 60,000 children and adults. Occasionally, it may be best both for the child and the family for him to be cared for in a special home for defective children. But many children's lives are saved and made worth living — thanks to medical advances; especially through early diagnosis and present day surgical techniques.

Prompt diagnosis and beginning of treatment can often make the difference between control of a birth defect and tragedy. A technique for checking a baby's condition in the first 60 seconds after birth (called Apgar Score) can help spot signs and symptoms of trouble requiring emergency action. This technique often calls early attention to defects that might otherwise be overlooked. Outstanding examples of other new diagnostic methods are blood tests for detection of body chemistry errors in time to begin treatment before damage occurs.

MULTIPLE HANDICAPPED - A young man who has a number of serious defects goes through coordination exercises under the watchful eye of an occupational therapist.



Life-Saving Modern Surgery

Pediatric surgery has made tremendous gains in the correction of serious malformations of limbs and internal organs. Even children with missing or imperfect arms or legs can be greatly helped. Today, many children are being fitted with artificial limbs almost as soon as they are ready to walk or grasp. And the devices themselves have been much improved. Children born without arms or with only stumps for legs, when properly treated and fitted with artificial limbs, can function remarkably well.

Some of the examples of life-saving modern surgery include:

Congenital heart defects - it is now possible to correct many congenital heart defects so that children who would otherwise be condemned to an early death or invalidism can grow up to lead normal lives and have children of their own.

Cleft palate and lip - Remarkable repairs of major disfiguring facial defects can be done by plastic surgeons, often even before a baby goes home from the hospital. Normal appearance is important, but this is only part of the goal. Dentists, orthodontists, speech therapists, and psychologists may work with these children for years so that their teeth, speech and attitudes will be normal. Through multiple therapy, many defects of the face and mouth have become relatively minor handicaps.

Spina bifida (split or open spine) - Today surgeons have learned to close and repair the wound in all but the severest of cases. Frequently children born with this defect remain paralyzed below the waist because of spinal nerve damage; they may need the attention of a battery of specialists to see them through the years of learning to walk with braces, adapting to special procedures because of lost control of bladder and bowel functions, and adjusting mentally and physically to family, school and community life.

Hydrocephalus - Special procedures called "shunts" have been developed to implant tubes which drain excess fluid harmlessly from the head to other parts of the body, saving lives, preventing mental retardation, and restoring health to these children.

Clubfoot - Orthopedic attention, sometimes including surgery, is giving many children with this common defect a proper lease on life. Their handicap can often be corrected completely.

Imperforated anus - Children with no opening for bowel movements can have this defect corrected by surgery.

Genito-urinary defects - Abnormalities of the kidneys, ureters, bladders and the whole genito-urinary system occur, often with serious consequences. Surgeons have been making great strides in developing techniques for solving these problems.

Other Life-Saving Methods

Other defects can be treated by special diets, either by removing a food substance the body cannot handle or providing extra amounts of a substance the body needs. Such diets do not cure: they don't remove the defect, but they prevent damage from occurring.

Children who inherit a gene from both parents for a disease called *galactosemia* are incapable of metabolizing a substance in milk called "galactose." Too much galactose accumulated in body tissues, particularly in the brain, can become toxic or cause damage. This causes mental retardation and other problems. Methods of early detection of this condition and a special diet have saved a number of children.

In Rh-factor babies, a blood incompatibility between the mother and her infant develops before birth. The condition once killed some 10,000 babies in the United States each year. Now complete blood exchange transfusion soon after birth usually solves the problem and gives these babies normal health. Research has developed a vaccine-like plasma that can be given to Rh-negative women within 72 hours after the birth of a Rh-positive baby to prevent the build-up of antibodies in her blood that can harm her next baby. If used properly for all women who need it, the special plasma can wipe out the disease.

Children with cystic fibrosis, once thought invariably to be fatal at an early age, are now living to adolescence and beyond. Medical advances

have devised techniques for early diagnosis, plus drugs and special treatment to control symptoms. Antibodies are taken by mouth or inhaled through an aerosol mask in mist form. This may thin and loosen the mucus in the respiratory system. Another technique for clearing the air passages is by postural drainage; a special positioning helps nature to remove the mucus from the lungs.

A Major Breakthrough - Rubella Vaccine

We have mentioned German measles (rubella) and the fact that when an expectant mother contracts it early in her pregnancy, her baby may be born with a birth defect. During the 1964 rubella epidemic, the disease caused defects in some 600 babies born in Florida. An additional 900 pregnancies among rubella-infected women ended in spontaneous abortions or stillbirths. In the United States an estimated 50,000 babies were killed by the virus or were born with defects because their mothers contracted the disease during pregnancy.

Much about the sequence of maternal-fetal rubella has been documented. The time the mother contracts the disease is important. During the first few weeks after conception, when the baby is beginning to develop, the infection is of great hazard to the heart, eyes and ears. Unlike radiation or thalidomide, which affects the fetus only at the time of exposure, the rubella virus contributes to acute illness during a longer period. The major disorders due to congenital rubella are congenital heart disease, hearing loss, cataracts or glaucoma, mental retardation, or spotty discoloration of the skin due to a blood defect.

Vaccine against German measles is available through county health departments and private physicians. Logically it would seem right to give it to the expectant mothers; but the vaccine causes a reaction in many adult females and the vaccine virus might damage the unborn baby. Therefore, to reduce the danger of children spreading rubella to women of childbearing age, it is safer and more practical to give the vaccine to children — in whom reactions are infrequent and there is no risk of pregnancy.

Too frequently parents confuse German measles with regular measles (rubeola) and think their children have already been vaccinated

— when in reality they have not. Currently there is a campaign by the Division of Health and county health departments to immunize over one million children between ages one and 12 within the next three years. Health officials believe this will avert any future epidemics of rubella in Florida, if immunizations are given to all future infants shortly after they are one-year-old.

Prevention of Birth Defects

Many birth defects happen because of chromosomal accidents or for some unknown reason. To an increasing and encouraging extent, some birth defects can be prevented. Prospective mothers and fathers can start preventing birth defects before they are married. Proper diet and maintenance of normal weight are conducive not only to good health of the parents — but to that of their potential children. Good health should be encouraged and fostered in each generation to ensure healthy offspring.

Prenatal care — what is and isn't done during pregnancy is most important. Every newly married couple should have a family physician who knows their health history, blood types, and the birth defect history of any relatives.

When a woman thinks she may be pregnant, she should see a doctor right away, put herself in his care, and continue to see him as often as he suggests. He will watch her health and counsel her on such matters as diet, drugs and exercise. A mother who cannot afford a private physician can obtain assistance at the county health departments' prenatal clinics. Some 28,000 women were admitted to county health departments' maternity nursing service during 1969.

Because of possible damage to the baby, a pregnant woman should take only drugs and other medicines prescribed by her doctor. "Pep" pills, tranquilizers, aspirin, sleeping pills and other pain killers are "drugs." The rule for the expectant mother is: never prescribe medicine for yourself.

Whenever an expectant mother sees a doctor for any reason, she should tell him immediately that she is pregnant or suspects that she is. It could influence the nature and timing of his treatment and prescriptions.

Low abdominal and pelvic x-ray pictures should be avoided, except in emergencies, during early pregnancy. Persons who have been exposed to radiation accidents should avoid having children until their physician considers it safe.

Heavy smoking during pregnancy is undesirable. Studies have shown that babies of mothers who smoke excessively weigh less than normal. If the baby is premature, the weight could affect its survival.

Whenever possible, an expectant mother should avoid being exposed to contagious diseases, especially German measles. If she learns that she has been exposed to diseases she is not positive she has had or against which she had not been immunized, she should report the fact to her doctor at once.

Florida's PKU-Testing Program

Phenylketonuria (PKU) is one birth defect found in newborn babies that usually causes severe mental retardation if untreated. Because of an inherited defect in an enzyme, some babies cannot use part of the protein

PKU TESTING - A laboratory technician in a Division of Health laboratory "reads" the results of special blood tests which detect a condition in infants that causes mental retardation.





LEARNING BALANCE

- A youngster enjoys a game in the occupational therapy department of a rehabilitation clinic.

in milk and other foods in the usual way. Soon after birth they have too much of a substance called "phenylalanine." Although the child appears normal, his mind may stop developing during the first year of life. PKU is found in about one out of every 10,000 to 20,000 babies.

Most new babies born in hospitals are given a special blood test to detect PKU. A Florida law makes the Division of Health responsible for promoting PKU testing in babies. In 1969, over 65,000 blood specimens submitted for PKU screening were examined in Florida's public health laboratories.

The present treatment for PKU is to give the child a special diet which is low in phenylalanine, but contains the right amount of other food substances for normal growth and development. Division of Health nutritionists work with families of PKU babies and children to assist them in following the diets prescribed by their doctors. In 1969, consultation was provided for 46 children; 45 received Lofenalac, a special food substitute which is available from the Division of Health. Along with the special diet, physicians order frequent blood tests to measure the amount of phenylalanine in the blood.

It is important to have babies tested for PKU as soon after birth as possible so that dietary treatment can be started early as it offers the best known means of preventing serious retardation. (It does not cure retardation already present, though it may reduce hyperactivity and other symptoms.)

Genetic Counseling

Another means of preventing birth defects is genetic counseling which can give parents who have had one defective child information about the chances of having another. Scientists have made progress in understanding chromosomal abnormalities and the part they play in defective births. New methods are being developed to identify people who may be carriers of genes that can produce birth defects.

One test consists of examining the amniotic fluid surrounding the fetus in a pregnant woman. By drawing off some of the amniotic fluid, recommended before the 20th week of pregnancy, scientists can study the cells in the fluid and sometimes determine if the developing body has inherited a disorder which will make him mentally or physically defected.

One couple visited a Birth Defect Center for genetic counseling. The woman had a sister whose child was afflicted with muscular dystrophy and she wanted to know what the chances were that she, too, might have such a child. Tests indicated that she did carry the gene in question and therefore possessed a very good chance of passing the "bad" gene on to her child. The couple decided to adopt children rather than run the risk of producing a defective child.

Another woman who was about to be married sought genetic counseling. She had a sister who had been born with Down's syndrome and she was afraid that her children would have the defect. After testing her, the doctor was able to tell her that her chromosomes did not show the abnormality in question. Since she was only 20 years of age, her chances of producing a child with Down's syndrome were one in 2,000. If she was older, the chances of her producing a mongoloid child increased. For a 45-year-old woman, the odds are one in 54.

Help for Those Who Live

When birth defects occur that surgery or diet cannot correct, rehabilitation can sometimes be effective in helping the child to live a better life. Occasionally, the handicap is mild and the child can carry on his daily activities, such as walking, feeding, dressing, toilet care, speech and social living, without too much difficulty.

If the handicaps are more serious, assistance by therapists and special teachers may be necessary to help the child to live something resembling a productive life. Maybe he will be only able to "live" in a wheelchair, but if his mind is alert, it is still possible for him to go to college and have a career in any one of a number of professions.

The Division of Health cooperates closely with the state and voluntary agencies concerned with children and adults who have birth defects. County health departments refer children to special clinics and programs as soon as the defects are discovered so that any necessary diagnostic studies may be made and rehabilitation may begin.

The Bureau of Crippled Children, now administratively located in the Division of Vocational Rehabilitation of the Florida Department of

SAY "MOO" - A speech therapist works with a youngster who has speech difficulty.



FAMILY ASSISTANCE

- A clinic's social worker talks to a mother and daughter. The social worker can help the family members adjust to the therapeutic needs of a defective child.



Health and Rehabilitative Services, is the state agency which provides medical and surgical care for handicapped children whose parents cannot pay all or part of the cost of private care. The Bureau sponsors and conducts clinics through which diagnostic, therapeutic and administrative services are given. Speciality clinics are conducted for many children with such birth defects as heart abnormalities, cleft palate, cerebral palsy, hearing defects, cystic fibrosis, clubfeet, and renal and blood problems. Specialists appraise each child according to his defect and make recommendations for medical care, including surgery, if needed, and rehabilitation. Because the Bureau does not operate a hospital or convalescent home, it purchases in-patient care from many Florida institutions.

Over 14,400 children were seen by physicians during the fiscal year of 1968-69 under the program of the Bureau of Crippled Children. Of these, some 1,500 were patients in hospitals and convalescent homes; 14,192 children were seen in clinics. The children were referred by county health departments, physicians, nurses, school officials, voluntary health agencies and patients' families.

A voluntary health agency that is primarily interested in serving the handicapped is the Florida Society for Crippled Children and Adults (Easter Seal Society). Some 1,000 individuals are seen daily in 13 medically-oriented clinics operated in Florida by local chapters. While two-thirds of the patients seen are adults, many of those treated are handicapped by birth defects. Others are victims of accidents, strokes, paralytic diseases, or some other crippling cause.



REHABILITATION - Occupational therapy (left) and physical therapy (opposite page) are only two aspects of the rehabilitation of congenitally defective children.

Many of the Centers cooperate closely with the local school districts and conduct classes for those children who are so severely handicapped that they cannot attend regular school. The patients are given physical, occupational, speech and hearing therapy and psychological evaluations. Because the clinics are operated on an out-patient basis, social workers counsel parents and families to assist them in helping with the therapy and day-to-day living of the handicapped children when they are at home.

The Easter Seal Society also operates Camp Challenge for the physically handicapped. More than 400 children and adults, many of them with birth defects, attend the camp each season. Half of those who attend are in wheelchairs. At Camp Challenge the handicapped youngsters and adults are urged to live as normal lives as possible and to participate in activities which prior to the summer camp had been thought beyond their reach. Even the most handicapped children participate in swimming, archery, bowling, hiking, arts and crafts and sometimes are surprised at the progress they make.

United Cerebral Palsy, another voluntary health agency, operates clinics offering speech, occupational, hearing and physical therapy. Classes for preschool children are conducted with emphasis on such self-help skills as sitting, head balance and self-feeding. Six cerebral palsy



centers in Florida conduct diagnostic evaluations and make recommendations for surgery, rehabilitation and follow-up.

Many children who are handicapped by birth defects are able to attend special classes or schools within their own communities. However, the State Department of Education operates the Florida School for the Deaf and Blind for those children who have a hearing or sight problem and are unable to attend regular public schools. During the 1969-70 school year, 789 deaf and blind students, ages five to 18 or 19, attended this school in St. Augustine. A great many were blind or deaf because of congenital defects and were prelingual (lost their hearing before they had learned speech or language).

The school only takes deaf or blind students who are educable. They may be accepted with other handicaps, such as minor cerebral palsy, if they are ambulatory enough to get around the school's 64-acre campus.

While the school gives hearing evaluations, and from audio tests and the medical history finds the cause of deafness, it is first and foremost an educational institution. The deaf children are taught lip reading, finger spelling and visual English. Then they go on to a full program of academic, vocational, physical education and extracurricular activities.



.... strolls with counselors in the open air, bowling and "romping" with fellow campers.





CAMP CHALLENGE - Many handicapped children are surprised with the progress they make at this summer camp. Activities include archery, target practice and nutritious meals....

There are programs similarly adapted to the needs of the blind who make up about one-third of the student body.

Various other clinics and centers work with children with birth defects. These include the four cystic fibrosis centers in Florida operated in conjunction with the hospitals in which they are located and the Bureau of Crippled Children.

A number of voluntary organizations have clinics and supply wheelchairs, braces and orthopedic devices for a wide range of defects, including muscular dystrophy and multiple sclerosis. There are



Diabetes—A Hidden Birth Defect

Medical authorities are beginning to look at diabetes, a chronic disease that usually shows up in adults, as a hereditary birth defect. For some time, they have known that this disease is frequently found in persons who have diabetics in their family background. For children who are diabetics, the disease is more serious and harder to control. The Division of Health's Diabetes Control Program carries out screening programs to find diabetics, and for those who are indigent, it provides the needed insulin.

organizations to help the mentally retarded, the epileptic, the blind and those with congenital heart defects. For some disorders, the state has only limited activity; for others, the official public health agencies have no programs and public health nurses refer those needing help to the voluntary agencies' clinics for diagnosis and treatment.

The Birth Defects Center in the University of Florida's J. Hillis Miller Health Center is concerned with the diagnosis and treatment of children with birth defects and with research procedures which are prompted by specific birth defect problems. The University of Miami School of Medicine also has a patient service center which, like the Birth Defects Center, is supported in part by the National Foundation.

Everybody's Problem

For the child who is born with defects and for his family, life may become a struggle. Many times the life of a family revolves around the defective child and the family develops a short-sighted, single purpose of

(Photographs on pages 286 and 293 courtesy of National Foundation-March of Dimes; page 290, Birth Defect Center, J. Hillis Miller Health Center, University of Florida; on pages 285, 298, 304, 306, 307, 308 and 309 taken at Brevard Crippled Children's Association Clinic.)

caring for the child. Through professional psychiatric help, the family can live a normal life.

You can imagine the joy one family experienced when its cerebral palsied child, through the aid of a therapist, was able to feed himself for the first time in eight years. Until that time, the mother had laboriously fed him everything he ate.

The National Foundation-March of Dimes estimates that several thousand children are born with birth defects each year in Florida. Some die at or shortly after birth. Some live. What becomes of these surviving children? A few are hidden by superstitious parents; and unfortunately, too many of the other handicapped who live receive no surgery, special diet or rehabilitation.

There are facilities for the diagnosis and treatment of some of the children with birth defects. These are usually aimed at one specific handicap. Parents with children who have multiple handicaps frequently have difficulty in finding help. Only a handful of the children with birth defects can be seen in clinics now available.

For example, of the deaf children in Florida, roughly 1,400 were indentified in 1970 and placed in special schools for the deaf. Others were

High Blood Pressure — Inherited?

Studies by the Heart Disease Control Program of the Division of Health have shown that children of parents who have hypertension have a tendency toward the disease. When both parents have high blood pressure, 90 per cent of the children also develop the same disease — sometimes early in their youth.

attending public schools or special classes; but too many others, perhaps, were left to shift for themselves — handicapped by a defect.

The Division of Health developed a portion of the certificate of live birth to indicate whether a child is born with congenital malformations or anomalies. The health agency hoped by this means to discover how many children are born with birth defects; but since it is not compulsory to fill out this portion of the birth certificate, it is frequently left blank by physicians.

Through maternal and infant care projects, county health department maternity clinics, family planning, immunization and PKU programs, the Division of Health is trying to prevent premature and defective infants. It is possible to prevent some congenital defects but in order for Floridians to reduce the number of defective babies, good maternal care, proper diet and genetic counseling need to be the common practice. There are some 1,000 causes of birth defects. We must continue to find the answers that will prevent and correct them.

ACHIEVEMENT - An empty wheelchair signals mental and physical accomplishments for a child who has gone swimming.



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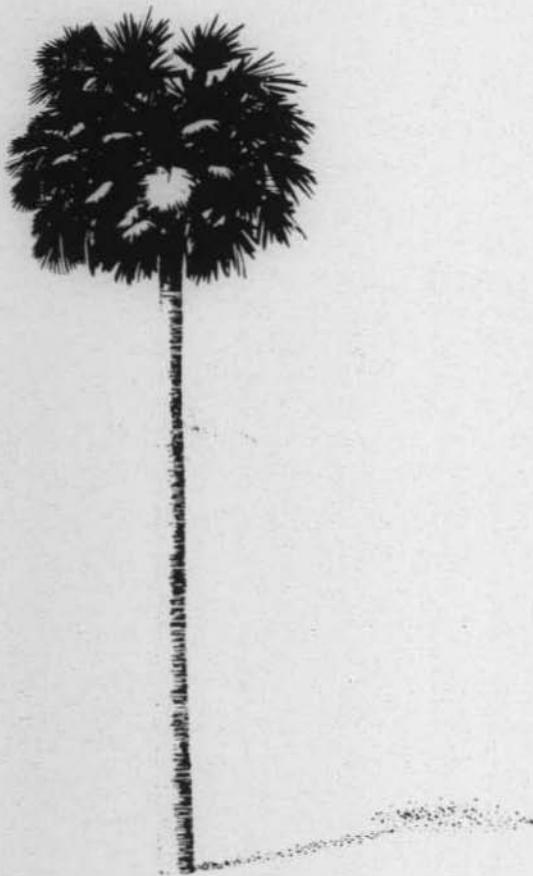
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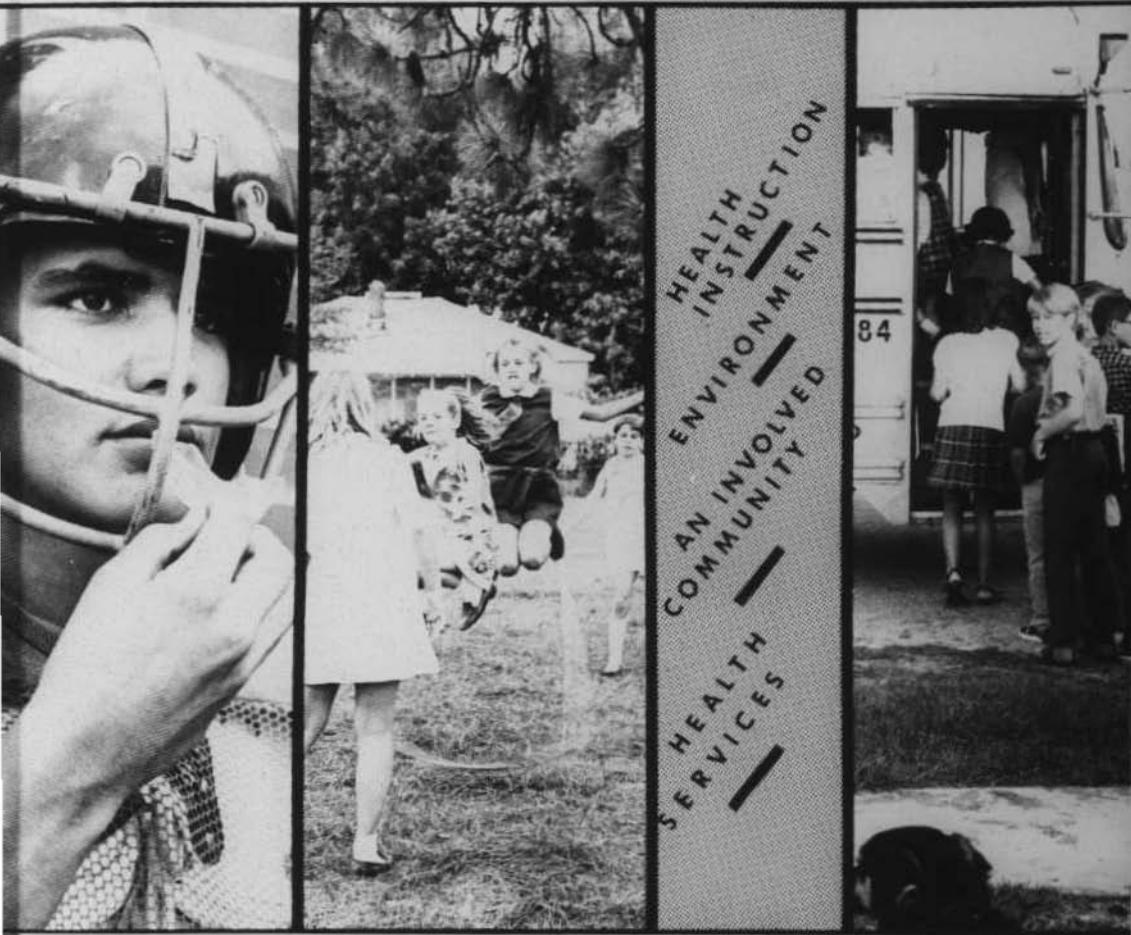
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FLORIDA HEALTH NOTES



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SCHOOL HEALTH

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SCHOOL

Jack was injured on the playground during a play period. As the result of his accident, his sixth grade classmates decided to learn about safety. They found out that

- Jack was taken to the health room by the teacher.
- The school health aide administered first aid.
- The principal was notified. Jack's parents were called. They came and took him to their private physician.

In its study of safety, the class made field trips to the county health department, fire station, police department and Civil Defense office. The members of the class combined their research and prepared a program on safety which they presented to other classes of the school.

* * * * *

Mary is a juvenile diabetic. Before she entered school, her parents discussed her medical condition with the principal, the teacher and public health nurse. The nurse and school health aide are kept informed of Mary's condition.

* * * * *

Coach Brown insisted his football players use mouth protectors to prevent injury to their teeth and mouth. Sam, one of the first-string



HEALTH

tackles, forgot his mouth piece during a scrimmage and had two of his front teeth broken off. Extensive and costly dental work was required to repair the damage.

* * * * *

Miss Smith noticed that Don is not attentive in algebra class. When questioned, he is indifferent in his answers; when asked about his schoolwork, he has outbursts of temper; he wears sunglasses most of the time. Miss Smith suspects that Don is using drugs, but she does not know what to do about the problem.

* * * * *

Mrs. Jones took a health course one summer at a Florida university which included spending three weeks with the staff of her county health department studying community health resources. On field visits, Mrs. Jones was surprised at the home environment in which some of the students lived. Now she understands why some students are inattentive, sleepy or hungry in school.

* * * * *

These are just five examples of school health in action. For some situations the answers were simple—for others, the answers were costly or are yet to come. There are many aspects of school health that require the attention of people—parents, teachers, principals, public health workers, and other medical people. The entire community needs to be concerned with the quality of health instruction, the school environment



SCHOOL HEALTH - The children of Florida should have the best health instruction, environment, facilities, opportunities and protection available. These call for a concerted effort on the part of the community.

and the services given the school environment and the services given the schoolchild.

School health also includes the **environment**—school buildings, playground, streets and the environment of the schoolchild—that should be clean, safe and capable of helping the student's learning process.

School health also involves the **problems** the schoolchild faces in his studies. He needs to learn about life and how to enjoy it. He needs to know about the pitfalls that could entrap him and how to avoid them. **Instruction** plays a vital part in teaching the schoolchild about life. Health can be stressed throughout the curriculum.

This issue of **Florida Health Notes** will discuss the areas of school health that affect the schoolchild—People, Environment, Problems and Services. It will also show how the Division of Health, the Department of Health and Rehabilitative Services and the county health departments cooperate with the State Department of Education, the local boards of public instruction and local professional groups, such as medical and dental associations, to improve the health of Florida's schoolchildren.

The Responsibilities

Both education and health are important to the growth and development of the children of Florida. The primary responsibility of education and health is, and should lie, with the parents. It is upon the parents that the prevention of disease and the well-being of the child primarily depends. Health supervision and health care are basically the parents' obligation and they must make the decisions concerning their child's care. A parent can spot quicker than anyone else seemingly minor ailments which could result in major complications.

Additional resources to the family's responsibility may be needed. These may come from the community, school or voluntary and governmental health agencies. Parents should first turn to their family physician or dentist for medical and health services. A properly organized school health program, which includes health instruction, healthy environment and health services, can help parents meet the

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obligations of health care. County health departments frequently assist in giving school health services, immunizations, dental services and other medical and health services when the family cannot provide itself with private medical care.

During school hours, the child becomes the responsibility of the principal—who acts as substitute parent. In order to help the parents provide health care, the school asks parents to fill out emergency cards indicating where they, or another designated, responsible adult, can be reached in case of an emergency. The parents are also asked to list their family physician and dentist.

In some counties, school health services and/or consultation provided by the county health department include immunizations, various types of screening programs with follow-up diagnosis and correction; medical and dental examinations and tests; health education material; environmental protection; accident prevention; nutritional consultation on school health; training of food service workers; and conferences for school and health personnel. However, all these services are not provided in all of Florida's 67 counties.

The mission of the school in the year 1970 goes far beyond the pure academic role of teaching "reading, writing and arithmetic" and preparing the candidate for examinations. Schools today must fulfill a demanding social task—to fashion children and youth for life. They must contribute to helping each one develop his abilities to cope in a socially acceptable manner with the everyday problems of living.

Some of the crucial health problems facing students, parents, school officials and public health workers in the 1970's include cigarette smoking, alcoholic beverages, self-administered drugs, teenage pregnancies, "health" quackery, driver attitudes, continuing personal and community hygiene, eating habits, exercise and rest. The responsibility to guide youngsters who are the most knowledgeable in history is shared by parents, the schools, the health agencies and the community.

THE PEOPLE IN SCHOOL HEALTH

The central objectives of school health are to protect youngsters from disease and accidents, to promote a safe environment, and to provide the children with knowledge to grow and develop, to make decisions and to



IN THE CLASSROOM - The teacher is concerned with the physical needs, emotional health and personality development of the student. She should inject health instruction into her teaching at every opportunity because she knows that health is a sense of "well-being."

meet the demands of life. Key people include the student and his family. They spend more time together than with any other group in the community. Therefore the family and home teach much about life and its living. As the child grows older, he may spend less time at home and more with his chums who exert strong influences upon his decisions.

The Student and His Family

By the time the child gets to school, he has already developed some basic attitudes and concepts of life. During the early years of his schooling, the student spends most of his time in a self-contained classroom with a limited number of teachers. His training is very much the responsibility of his elementary school teacher, his parents, and perhaps his church. Scouts, friends and his own interests also help him with his education.

As the youngster reaches puberty, his physical and mental changes present problems. His rapid growth requires more food with protein, calcium, iron and other food essentials. His body changes influence his attitudes and interests and he relates his anxieties to the amount of time he spends before a mirror. The length of his hair is important to him, but this attitude may change overnight. However, his health practices are important and the examples shown by his parents, friends and heroes during his early years greatly influence his health habits for the rest of his life.

Too often, the hundred-mile-an-hour driver, the "clever" bandit, and the "daring" hold-up man are the persons the youth tries to emulate. This type of idealism makes it increasingly difficult for parents and teachers to assist youths to develop a worthwhile sense of values. Difficult as the task of teaching may be parents and teachers, health professionals and those in related fields must assume the responsibility of teaching the value of sound worthwhile goals.

The School Principal

Because he is the administrative officer of the school, the principal is the one who determines how far the school and its staff can go in providing a healthy environment, health services and health instruction.

The question is: How far does the school's responsibility go in handling the acute problems that arise during the school day, such as fainting, abdominal pains, trauma and athletic injuries? How far should school's instruction go toward encompassing the public health problems of the adolescents?

The quality and character of the school's health program is determined to a large degree by the interests of the school principal, his concept of health and the encouragement of the school staff, pupils and community to exert the necessary efforts to develop and maintain an effective health program.

The principal, or other designated school official, coordinates the program, serves as liaison with community health groups and agencies, interprets to school personnel the health policies of the school and county health department, and generally performs those functions which create a favorable environment for a health program.

School Health Coordinator

State accreditation standards for Florida schools require the appointment of a faculty member as a school health coordinator. A teacher who has received special training in health is best able to function effectively as a coordinator. If properly qualified teachers are not available in every school, the principal can accomplish more by appointing a faculty member who is interested in health to serve as school health coordinator.

The coordinator should give general guidance and direction in the development and operation of the school health program. He should give special guidance to and service on the school health committee. Among his duties, the school health coordinator should

- serve as the principal's representative in all matters concerning the health of the school-age child in the school or community;
- evaluate, with the assistance of qualified professional people, the program of health instruction; safety hazards and practices; environmental factors, such as water supply, waste disposal, lighting and ventilation; the school lunch program; and the correlation of health with science, home economics, physical education, and recreation programs;
- assist teachers and other staff members in securing sound and appropriate health education materials;
- explore ways of making health services more meaningful to students, with special attention to making the services more educational; and
- make suggestions and recommendations to the principal concerning health problems, health needs and methods of improving the overall health program.

The Teacher

The teacher has always been considered as the primary influential force in the school health program. Her knowledge, continuous contact with and her constant concern for the individual students make this a fact. The teacher should

- understand each child as an individual through constant teach, observation, and be aware of his physical, emotional health, personality, and needs;
- provide a classroom environment that encourages and supports healthful living;
- use the "teachable moment"—regardless of the subject—to educate the students concerning good health;
- be constantly on the alert for signs or other indications that the student is experiencing some adverse health condition;
- consult with parents, public health nurse, or other health service person when a pupil or group of students is confronted with a health problem;
- assist with vision, hearing and other types of screening programs approved by the appropriate authority and utilize the findings for educational purposes as well as for the selection of students for referral to various health agencies or physicians; and
- understand the role of the county health department staff and other local health professional in the school health program.

Every teacher is a health teacher!

The School Health Aide

The school should have a health room where children can go when they are ill. The room is usually staffed by a trained volunteer called a "Gray Lady," or by a trained school health aide. The Gray Lady system of volunteers who staff such health rooms has been in use in Florida for a number of years. But with the shortage of volunteers, some schools have employed health aides to carry on the duties needed in a school health program.

Parents and school personnel often ask if it is not advisable to have a full-time professional nurse in school. Studies have shown that caring for the relatively few sick or injured students found among a supposedly well pupil population does not usually justify the full-time employment of a

highly-skilled professional nurse. More than 50 percent of her time would be occupied with clerical duties and only 10 to 20 percent of her time in meeting the health needs of the students.

The school nurse can only administer first aid and then refer the student to a physician. Volunteers or paid school health aides can be trained to do this, and in addition, be taught to assist with technical aspects of screening programs.

The duties of the school health aide are carried out under the direct supervision of principal and public health nurse assigned to the school with general supervision by the county school administration and the county health officer. She should

- work the same hours as the other school personnel;
- keep the health room neat and clean;
- be responsible for clerical duties regarding health services;
- perhaps, perform routine vision and hearing screening examinations;
- submit test reports to public health nurse for review and possible follow-up on health problems;
- make referrals to school administration and public health nurse for follow-up;



DO YOU FEEL BETTER? - A Gray Lady volunteer and public health nurse comfort a student in a school health room.

- assist in organizing and conducting preschool roundups;
- take and record temperature accurately when necessary;
- notify the principal at once if a child appears acutely ill, regardless of the child's temperature, and notify the parents if directed by the principal;
- give first aid as provided for in the first aid policy and emergency instruction approved by the county school administrator, local health officer, county medical society and dental society;
- remain with and give comfort to the sick or injured child; and
- notify the principal or delegated teacher immediately in case of a major accident.

The most common complaint faced by the school health aide is "I don't feel good," followed by "I want to go home." Tactful questioning can bring out more specific complaints, such as: headache, toothache, earache, sore throat, runny nose, stomachache, upset stomach, chills, feverish, diarrhea or some other health problem.

The school health aide should then check the child's temperature. If the temperature is not elevated, she can suggest that the child lie down for a short time. If the child feels no better after resting, the parent should be notified by the principal or other designated school personnel.

No student is permitted to leave the school before his parent—or an adult delegated by the parent—is consulted, except when a major emergency makes it necessary to take the child to the hospital or physician's or dentist's office.

A little personal attention for minor complaints is frequently sufficient to help the child to feel better and return to the classroom. The student with a minor complaint should be encouraged to remain in school unless the child's health, or that of his classmates, is endangered.

Other School Personnel

In addition to the above, all of the other staff members of the school make a direct contribution to the health of the pupils. The school secretary, maintenance director, lunchroom manager or supervisor and the custodial staff—by the very nature of their responsibilities—are in strategic positions to influence the school health program.

The officials in the county school offices, such as the superintendent, county health coordinator and special supervisors have responsibilities and functions similar to those of the local school personnel. The functions and responsibilities differ primarily in that the county staff devotes time and effort to planning, policy-making, supervision, consultation, rather than direct operation of the school health program. The administrative decisions on the county level frequently have a wide influence on the depth of the school health program.

The County Health Department

The county health department is legally responsible for certain aspects and activities of the school health program. The nurses, health officers, sanitarians, health educators and other county health department personnel have an appreciation for the educational approach to health and regard school health as part of the community health picture. They should cooperate fully in the development and conduct of the school health program.

The **county health officer**, as the administrator of the county health department, interprets public health department policies to school officials and determines how the department fits into the school health program. He assigns responsibilities for school health functions to his staff; approves procedures and activities engaged in by his staff members as they work in the school health program; and maintains a program-balance in relation to this and other facets of the community health program.

The public health nurse

- interprets the medical aspects of the school health program in accord with the law and policies of the health department;
- consults with teachers, principals, parents and pupils concerning the health problems and needs of the individual child;
- encourages teacher-nurse conferences whenever it benefits a child and his parents to clarify a point for either teacher, parent or nurse;
- provides scientific information to the school staff on health problems in line with the school policies;
- interprets the health problems of the community to the school;



SCREENING PROGRAM - A public health nurse instructs a student on how to respond to the audiometer which is operated by a school health aide. The county health department staff participates in a variety of screening programs in schools.

- assists in the development of communicable disease control projects, screening procedures, and other activities included in the total school health program;
- assists with the development of first aid and procedures for emergencies; and
- assists in the training of school health aides, Gray Ladies, and other individuals who staff the health room.

The **sanitarian** is responsible for interpreting the laws and rules of the state and community in respect to the school site, building construction and maintenance, and other sanitation and environmental factors. He advises the school officials and assists in the providing of a safe and sanitary environment, including safe water supply, proper waste disposal, proper storage and sanitary preparation of food, and solid waste disposal. He also engages in a variety of other activities related to environmental health that promote and encourage good health among schoolchildren.

The **health educator** is especially prepared in the proper use of educational methods and community organization. However, only a handful of Florida's county health departments have health educators. He is charged by the health officer with the responsibility for planning and developing a public education program which will enable the people of the community to improve their personal health and environment. The health educator contributes effectively to the school health program by serving as a resource person to the teacher; cooperating with the school health coordinator in the fulfillment of his responsibilities; and

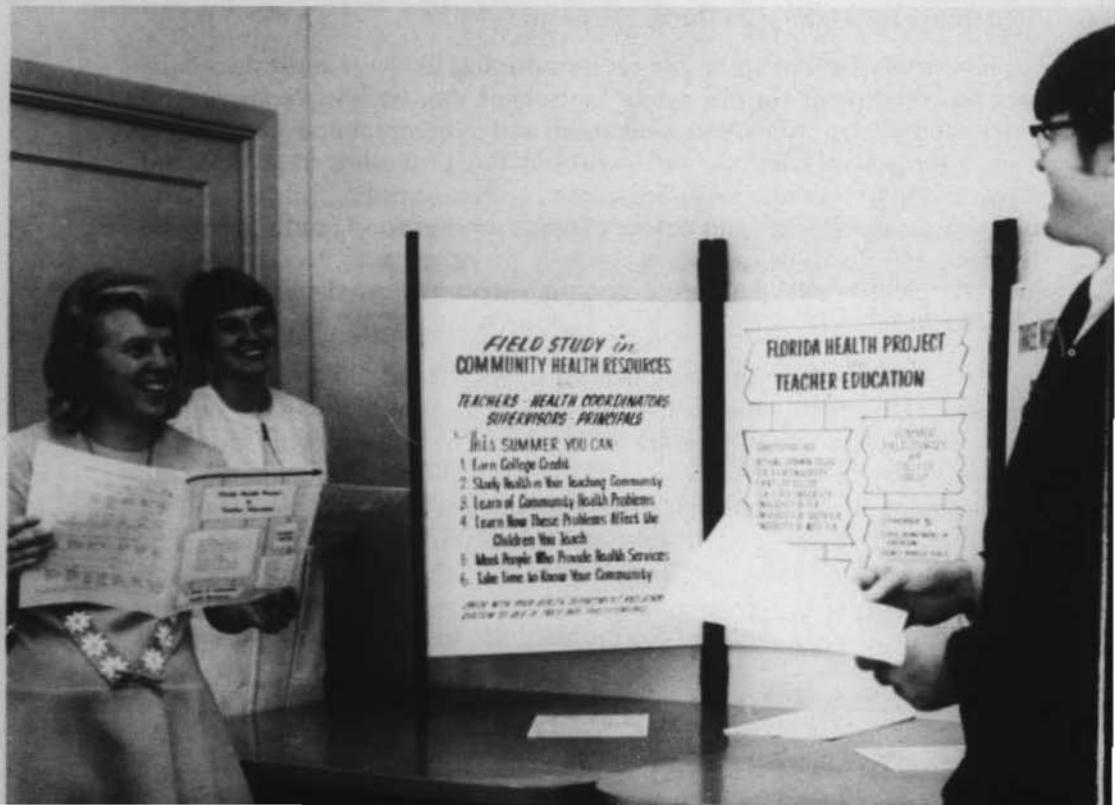
interpreting the health needs of the school to other health department personnel and the work of the health department to the school.

Dental disease is a major public health problem. In those county health departments which have dental clinics, **public health dentists** give dental treatment to underprivileged pre-school and elementary schoolchildren, and in some instances to emergencies for underprivileged high school students. He promotes and carries on a dental health education program in cooperation with Parent-Teacher Association, civic groups, schools and other organizations.

Health Project in Teacher Education

One program developed by the Division of Health and the State Department of Education to update and strengthen the health services and educational program among Florida teachers is the Health Project in Teacher Education. In 15 years of operation, the Project has brought

TEACHER EDUCATION - Over a thousand teachers have become aware of health problems, community resources and students' needs during the 15 years of the operation of the Health Project in Teacher Education.



together over a thousand teachers who were concerned with health in the schools; public health personnel who were concerned about the community health, and voluntary health agencies interested in education and services to citizens.

Many teachers return to the classroom with new awareness of current health problems and are better able to recognize students' needs, knowledgeable of what resources are available, and whom to contact for follow-up services. Fellow faculty members frequently look to the participants of the Health Project for guidance, assistance and resources necessary to a school health program. Frequently, those who have taken the course are appointed as school health coordinators.

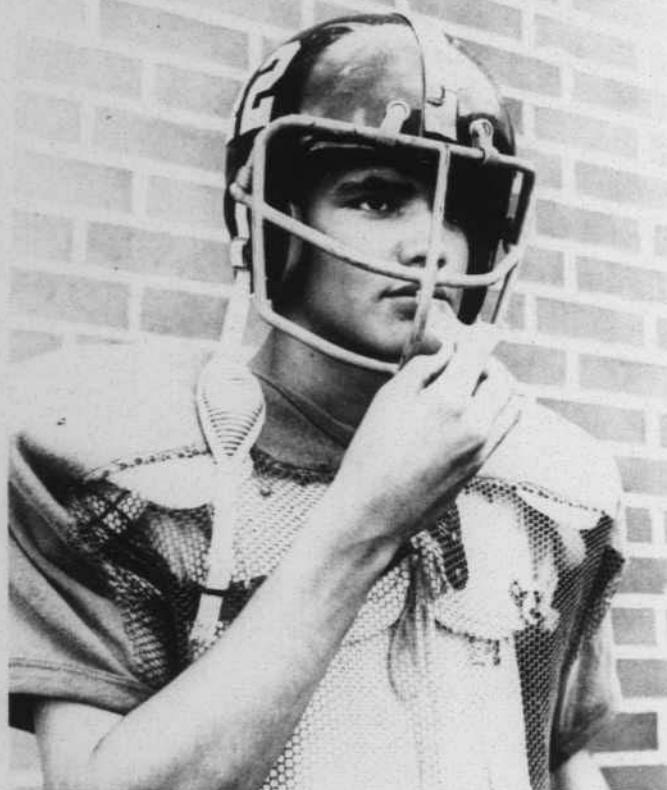
During several weeks of the 1970 summer, 60 teachers registered at seven colleges and universities for the Project. They spent two days on the campuses for orientation at the beginning of the course. The teachers then spent three weeks in county health departments where they studied community health resources and needs. They made field visits with the public health nurses and sanitarians, worked in the clinics; visited health facilities in the counties; and made contact with voluntary and other local service agencies and institutions.

Teachers were amazed to find the poor environmental conditions under which some of the students lived. They became more aware of the health problems facing the students and were able to identify the educational results of the problems. The teachers became acquainted with the staff members of the county health departments and other health-related agencies—on a first-name basis; they became aware of the resources in the community, and learned where to refer students who had problems.

As a conclusion to the Project, the teachers returned to their respective colleges and universities for a final on-campus session, including evaluation.

The School Health Medical Advisory Committee

There is a continuous need for authoritative and objective policies for the school health program. These policies should result in sound health and educational practices that protect, maintain and improve the health of the schoolchild. These policies need to be reviewed periodically and, if necessary, altered to meet the changing situations.



PREVENTING ATHLETIC INJURIES - Over the years the School Health Medical Advisory Committee has made recommendations that have improved school health programs. Some of these recommendations have concerned sporting equipment to prevent injuries, such as mouth protectors for football players.

The State Board of Health (now the Division of Health), Department of Education and the Florida Medical Association recognized this need and in 1958 designated the Medical Association's Committee on Child Health as the School Health Medical Advisory Committee. Representatives from the Division of Health and Department of Education serve as consultants to the Committee. Upon the recommendation of the group, representatives from the Florida Dental Association, Florida Pediatric Society, and the Florida Academy of General Practices were added as ex-officio members.

The Committee has continued to provide guidance in school health matters to the state's school and public health systems. Also, the Committee has urged the formation of a comprehensive administrative school health plan and functioning advisory committee to help establish policies and responsibilities for school health on the local level. This should result in effective action for the greatest possible benefit to students.

The School Health Medical Advisory Committee over the years has made a number of recommendations for the improvement of the school

health program. These are updated as changes occur. The latest opinions on a wide range of subjects are brought before the committee by experts and after careful study, the Committee may make recommendations to the two state agencies for appropriate transmission to local authorities.

Some of the recommendations suggested by the Committee deal with:

- adequate health instruction;
- increased teacher education in health education;
- drug abuse program;
- smoking and health;
- vision screening equipment;
- dental screening programs;
- fluoridation of public water supplies;
- recommendations for school lunch programs;
- physical examinations to be included for driver education;
- school health insurance;
- athletic injuries and equipment to prevent them;
- tackle football in junior high schools;
- use of mouth protectors in football;
- use of trampolines in the school health program; and
- school bus safety.

SCHOOL ENVIRONMENT AND HEALTH

While people and health instruction are important to the development of Florida's children, there is little doubt that the influence of the environment on the individual is strong. Each person is affected by his surroundings. The public school facilities, therefore, should represent the people's investment in the future and should be designed to serve to improve the health of children and teachers, provide safety, develop aesthetic appreciation, and offer some opportunity to teach healthful living.

The school administration is responsible for providing a healthful physical environment. Administrators and classroom teachers are responsible, not only for the best educational use of the environment, but for keeping the environment as healthly, safe and attractive as possible.

The School Building

While the school administration must assume the major responsibility in the providing of a safe and healthful school environment, the county health department must share this responsibility. Building sites, plans and actual construction should be reviewed by an environmental health specialist or sanitarian in the county health department as well as in the Division of Health—at the state level.

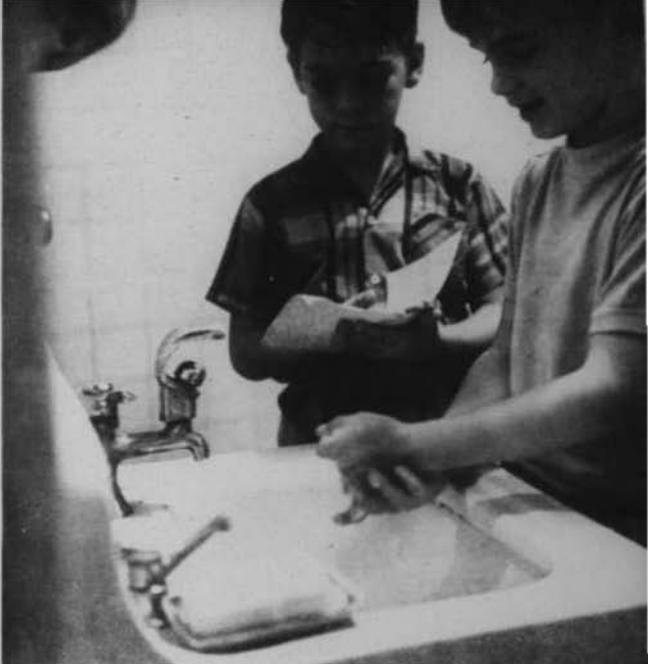
Beautification should not be overlooked in the planning of the building. A spacious lawn, shrubs and trees should be provided in front and around the building. The shrubs and trees should be spaced and kept trimmed so that they will not obstruct the source of natural light. There should be adequate surfaced and grass play areas to permit physical education and recreation facilities.

The drinking water used in school is of great importance from a health standpoint. Facilities for water supply for all schools should be constructed, operated and maintained in accordance with the regulations of the **Florida Administrative Code**. The most satisfactory method of

TODAY'S TREND - One-story school buildings of modern design are popular in Florida. New school facilities frequently have air conditioning for student and faculty comfort.



SANITARY FACILITIES -
Standards for school rest-
rooms are set by the
**Florida Administrative
Code.**



disposing of school sewage is by connections with a municipal sewerage system. If there is no municipal system available, special facilities must be arranged. The requirements for adequate sewage disposal systems are also found in the **Florida Administrative Code**.

The use of common drinking cups went out of fashion with the horse and buggy and is unlawful today. Sanitary slanted jet drinking fountains should be installed in the ratio of one to every 100 pupils and teachers with not less than two for each school.

School architecture now emphasizes the needs of children and the trend toward one-story building has improved the schools' acceptability to students, teachers, parents and the community.

Temperature and ventilation were once left to nature—more or less. Now air conditioning is becoming more a part of new school construction. The problems of ventilation are lessened to a large degree by air conditioning which replaces hot, humid, stale air with fresh, cool, clean air. This exchange helps reduce germs. Evidence shows that teachers and pupils work better in this type of environment.

A health suite should be planned in the construction of every school, preferably in the administrative unit. The health room should be adequate for the isolation, emergency and temporary care of pupils who

become ill or injured at school. Screened partitions are used to provide privacy where it is not possible to completely isolate or separate boys and girls.

Whether one room is set aside for this purpose, or an entire suite of rooms, minimum equipment should be a cot, lavatory, cabinet space for first-aid supplies, a table and chair, a sanitary waste container and platform scales. Other equipment, such as a sterilizer, file for records, screens for isolation purposes, bulletin board, desk for the health personnel, and a two-compartment sink with closed cabinet, is also desirable.

Other facilities in the school building should include a teachers' lounge, which contributes to the health and emotional well-being of the teachers.

The school building should include physical education facilities that will help in carrying out a balanced physical and recreational program which is a part of the total health program. Showers and dressing rooms should be attractive, sanitary and meet state recommendations as to size and facilities.



DRINKING FOUNTAINS-

Drinking water is important in school health and standards are regulated by the Division of Health under the **Florida Administrative Code**.

A school lunch department is essential to every good school. The capacity of the lunch facilities should be based on the school enrollment. School lunch buildings, equipment and food service practices should conform to the standards set forth in the **Florida Administrative Code**.

At least one toilet for each sex is required in public schools. These should be accessible from playgrounds and classrooms. Handwashing facilities, soap and towels are essential in rest rooms; hot water is recommended; mirrors are desirable.

Sanitation at School

While certain standards are set by the **Florida Administrative Code** and inspections made by the county health department sanitarians, the primary responsibility for the maintenance of a clean and sanitary school plant rests with the custodial staff. The school administrator is responsible for all actions and conditions.

The custodian should use supplies and utilities as efficiently as possible. He is responsible for keeping the school buildings, their fixtures, furniture and equipment clean so the students and faculty can enjoy a clean and tidy environment.

Garbage cans should be kept tightly covered at all times and periodically cleaned and washed. Disposal service is best carried out by a municipal or commercial pick-up service. Insect and rodent control is important in school sanitation. The services of the county health department may be needed for control of pests beyond the immediate environs of the school.

Teachers can assist the custodial staff by helping children to establish good housekeeping habits throughout the school day. Students should be taught not to litter the school grounds, streets or their home. This is one area of instruction that is frequently neglected—both at home and in school.

One teacher was concerned over the condition of the grounds around her school. She knew that cleanliness is an important part of character building. She took advantage of the opportunity to teach this lesson to her fifth graders when her class was invited to a play-day at a neighboring school where the grounds always looked so well kept.

LUNCHROOM INSPECTION - A county health department sanitarian inspects the eating utensils of a school lunchroom. He advises the school officials on proper sanitation in and around the schools.



When discussing the play-day with her pupils, the teacher suggested they compare the other school with their own—the grounds, equipment, and classrooms. As they returned to their school, the fifth graders saw the difference in the cleanliness of the two schools and began to plan a cleanup campaign.

They wrote their principal asking that he suggest other children in the school cooperate. They wrote, "It isn't safe or healthly to have papers, cups and waste on the school grounds, and besides, it doesn't look nice."

Safety and School

School administrators and county health departments are constantly on the alert to make schools as responsive to the needs of the youth and yet provide a safe place to study and play. Records show that deaths resulting from accidents which occur in schools are relatively few—but there are serious accidents. These accidents can and must be prevented.

Safety should be included in the planning and equipping of playgrounds. Grass areas should be well maintained. Courts and baseball diamonds should be constructed to provide for a variety of activities. Playground equipment should be located so as to protect children from moving parts. The equipment should be installed on a substantial foundation and inspected for safety at regular intervals.

The movement of children to and from school increases chances of accidents. Children frequently play along the sidewalk and dash into the street without looking. Where there are no sidewalks, the hazards are increased. Much consideration should be given to stop signs, school zones and police patrols during times of heavy traffic. Safety education must be emphasized by parents and educators.

Schoolboys, and sometimes girls, are used by many schools as patrols to assist children across dangerous street intersections. The patrols should not direct traffic from the street but work from the curbs with flags. The flags should be placed on poles which the youngsters can extend into the street to stop traffic when the children are ready to cross. The schoolboy patrols should be trained to be effective and yet cause a minimum of slow-up in traffic. Students should realize the importance of the work of the patrols and be taught to follow their instructions. The patrols are not only instrumental in reducing accidents but also have a definite educational value through the training of young people as good leaders.

When the children are on the school grounds, adequate supervision must be provided. The organization and supervision of play activities before school, during free periods, and after school must be recognized as a definite responsibility. A physical education period should be used to provide instruction to the children on the safe use of all the facilities and equipment on the school grounds.

HELPING FELLOW STUDENTS - A member of the schoolboy patrol stops traffic while other children cross the street. The patrols help reduce accidents and train leaders among children.



SCHOOL HEALTH SERVICES

As mentioned before, the county boards of public instruction and the local health department share a joint statutory responsibility for the school health program. In addition, physicians, dentists, workers in voluntary health agencies and other professional health personnel have a moral responsibility.

As a result of decisions and recommendations of county school health planning committees and school health committees, services provided may vary from county to county and school to school. However, in most instances, school health services will include

- detection of health needs of children;
- follow-up and interpretation of these needs;
- care of emergency illness or injury;
- disease prevention and control; and
- accident prevention.

Effective July 1, 1970, Florida law requires a health certificate for children's admission to kindergarten or first grade. Health appraisals are also recommended at regular intervals for every child. This health screening examination will provide the teacher, nurse, parent and other interested persons who are responsible for the child's physical and emotional well-being with accurate information. It will identify the child who needs treatment or referral to a physician, dentist or related health professional or agency. And it will help identify children who have special defects, remedial or permanent, which necessitate adapted programs: cerebral palsy, heart disease, epilepsy.

School health records should be kept available to the teacher so she can make necessary notations as to significant changes or conditions developing in individual students. These records should be retained permanently and treated as highly confidential, since they contain information on the child's personal history. When a child is transferred to another school, his health records should be included in his cumulative folder.

Only the teacher, principal, public health nurse, parent, county health officer—and through him, the private physician or dentist or authorized person in a related health field—have access to these records. Other persons should be required to obtain permission from the county superintendent of schools and county health officer before they have access to the records.

Students entering the school for the first time are required to be examined and free of communicable disease. It is preferred that the examinations be done by a private physician, dentist and personnel of related health professions. Periodic examinations should be conducted also at the beginning of adolescence and before the student leaves high school. Additional examinations, even annual ones, should be arranged if time, money and circumstances permit. Those students who do poor school work may benefit from a thorough examination by a physician.

Ideally, children should have had their immunizations early in life. By the time they enter school they should be receiving booster immunizations. It is not recommended by the Division of Health that immunizations be given in schools, except in case of emergencies. Such an exception is the current campaign against rubella (German measles) in

School Health Publications

Several publications are used by Florida schools as sources of information on school health. Published by the Division of Health and the State Department of Education, they include:

- A Guide — *Health Programs in Florida School* — Bulletin 4-D
- A Guide — *Design for Teaching Dental Health in Florida Schools* — Bulletin 7
- *Planning and Staffing a School Health Program* — Supplement to Bulletin 4-D
- *Better Health for Florida's Children* — Bulletin 4-E
- A Guide — *Florida School Lunch, Sanitation and Safety* — Bulletin 33-F
- *A Handbook for Teachers on Alcohol... Narcotics Education*



IS IT THIS TOOTH? -

A public health dentist gives dental treatment to an underprivileged child. He also carries on a dental health educational program in his office and schools and with community groups.

which the Division of Health is trying to immunize all children between one and twelve years of age.

The school building frequently serves as a community center for mass immunization campaigns that are carried out from time to time.

The teacher, health coordinator and public health nurse can and should take the opportunity to capitalize on the immunization programs and teach the children the necessity of immunizations and how they protect the youngsters from illness.

HEALTH INSTRUCTION

Coupled with the efforts of the community, the use of facilities and the availability of health services is health instruction. This is also an important part of the school health program. Health education is an action program concerned with real people living in real situations. Students—in school and at home, on the street and the playground—are involved with health. The ability to recognize health problems in the school, home or community, to find the solutions, and to institute and

carry out programs that change undesirable conditions, actions and beliefs is the real test of the effectiveness of a health education program.

A thorough understanding of health facts and the development of positive attitudes permit young people to grow and develop, to make decisions, and to interact in contemporary society.

The health program of the school should supplement and re-enforce the health efforts of the home. However, parents in many homes are influenced by outside factors—television, radio, exhibits, magazines and newspapers and friends. Too much of the information thus given out is only partially true, or misleading—if not altogether false.

Some elementary school teachers may confine health instruction to a 50-minute period of the day, saying, "Now children, let us take out our personal hygiene books and read for this period." A wise teacher will inject health instruction into her teaching at every opportunity because she knows that health is not only the prevention of disease but a way of "healthy living."

Children in kindergarten, primary and intermediate grades need to be taught body structure and functions; personal cleanliness and good grooming; recognition of the importance of exercise, rest and sleep; the choice of clothing for indoors and outdoors comfort; the selection of a proper diet; posture and control of the body; first aid and emergency care; mood modifiers, such as alcohol, narcotics and tobacco; and family life. They should be given an understanding of environmental health and the ways the community's health is protected.

Health instruction in secondary schools is frequently neglected or included as part of the athletic program.

In junior high school, the health instruction should include safety education and first aid, family living (growth and development and the family unit) mental and emotional health, communicable and chronic diseases, and consumer health (including the facts about health advertising, insurance, fads and superstitions and home remedies).

Senior high school students should delve deeper into family life and the responsibilities of marriage; the problems of emotional and social maturity and understanding of maturing adult roles; communicable and chronic diseases; driver education and accident prevention; and

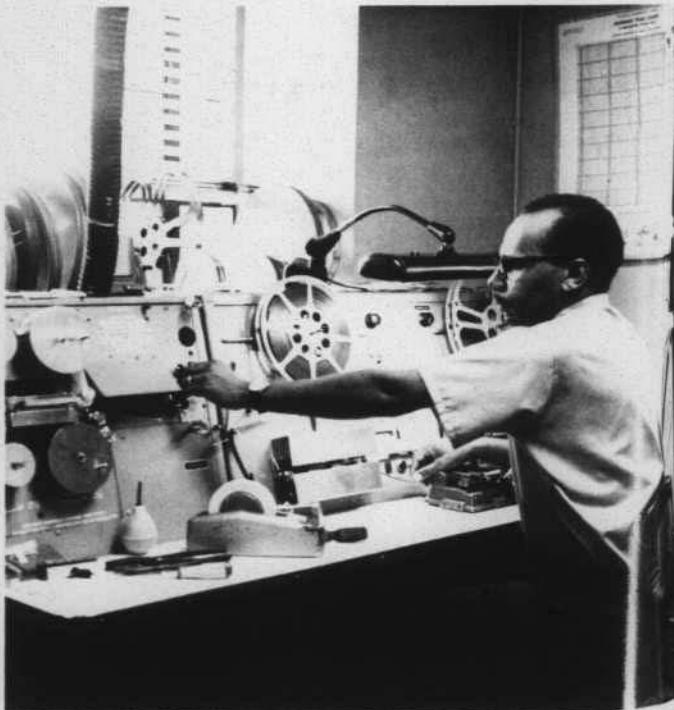
opportunities for careers in health, such as in medicine, dentistry, nursing, public health and the increasing allied health fields.

The 1970 Florida Legislature took note of the current drug and substance abuse situation among today's young people and passed a law which required the State Department of Education to develop a comprehensive drug abuse education program for all children and youth in kindergarten and grades one through twelve. The program, administered by the Commissioner of Education, with the consultation of the School Health Medical Advisory Committee, would teach children the adverse and dangerous effects of drugs on the human mind and body.

A similar law to provide instruction of the dangers of alcohol and intoxicating liquors was passed by the State Legislature a few years ago.

Another 1970 law established a comprehensive drug abuse program to be administered by the Department of Health and Rehabilitative Services, of which the Division of Health and its county health departments are a part. When fully operating, this program will provide

FILMS FOR SCHOOLS -
A technician at the Division of Health cleans and inspects one of the hundreds of 16mm movie films loaned out by the Division's audio visual library each month.



new materials for use in schools and for public information programs, as well as treatment and rehabilitation for drug users.

The Division of Health's Role

While the county health departments and local boards of public instruction are legally responsible for the school health program on the local level, the Division of Health and the State Department of Education carry out a joint responsibility, morally and legally, for the school health programs at the state level.

The Division of Health, through its Health Education Section, maintains an audio-visual library that stocks 16mm movie films and other health education material available to schools. The Section also distributes pamphlets on a wide variety of health subjects.

In addition, the Division of Health has consultants on health education, venereal disease control, and other communicable diseases; smoking and health, dental health, nutrition, and maternal and child health. These consultants work with teacher groups, Parent-Teacher Associations, community organizations and professional agencies in promoting health education.

An Effective School Health Program

No story on school health would be complete without mention of problems facing the young people today. Drugs, alcohol, venereal disease, unwed pregnancies and illegitimate births, are some of the problems found too frequently among the youth. The schools and the Division of Health, the Legislature and the public are all aware of these problems and in many cases the answer lies in the cooperation of all factors of the community.

At the present time, there are no simple solutions to the problems that face schoolchildren and youth. Some of the problems of the schoolchild in his tender years, such as growth and development, the learning process, and relationship with other children and adults, are the same type faced by his parents. There is no panacea (cure-all) for these types of problems.

An effective school health program can help many youngsters over some of the rocks on the road of life. The principal, teacher, parents, public health workers can strive to carry out the best school health program they can; but it is up to the community to bring about a school health program that will do the job of teaching the schoolchildren of Florida about "healthy living."

Projects in Health Education

Three demonstration projects in health education are currently being developed in Broward, Duval and Seminole County schools which will implement concepts made by a national school health education study group. Fifteen or more other county school districts are including some of the concepts in their curriculum.

Ten concepts of health education suggested by the study group are:

1. *Growth and development influence, and are influenced in turn, by the structure and functioning of the individual.*
2. *Growing and developing follow a predictable sequence, yet are unique for each individual.*
3. *Protection and promotion of health are individual, community and international responsibilities.*
4. *The potential for hazards and accidents exists, whatever the environment.*
5. *There are reciprocal relationships involving man, disease and environment.*
6. *The family serves to perpetuate man and to fulfill certain health needs.*
7. *Personal health practices are affected by a complexity of forces, often conflicting.*
8. *Utilization of health information, products and services is guided by values and precepts.*
9. *Use of substances that modify mood and behavior arises from a variety of motivations.*
10. *Food selection and eating patterns are determined by physical, social, mental, economic and cultural factors.*

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of the
Florida Department of Health and
Rehabilitative Services**

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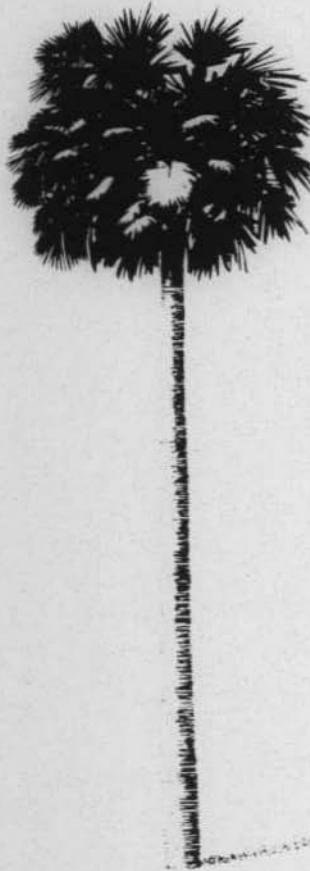
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